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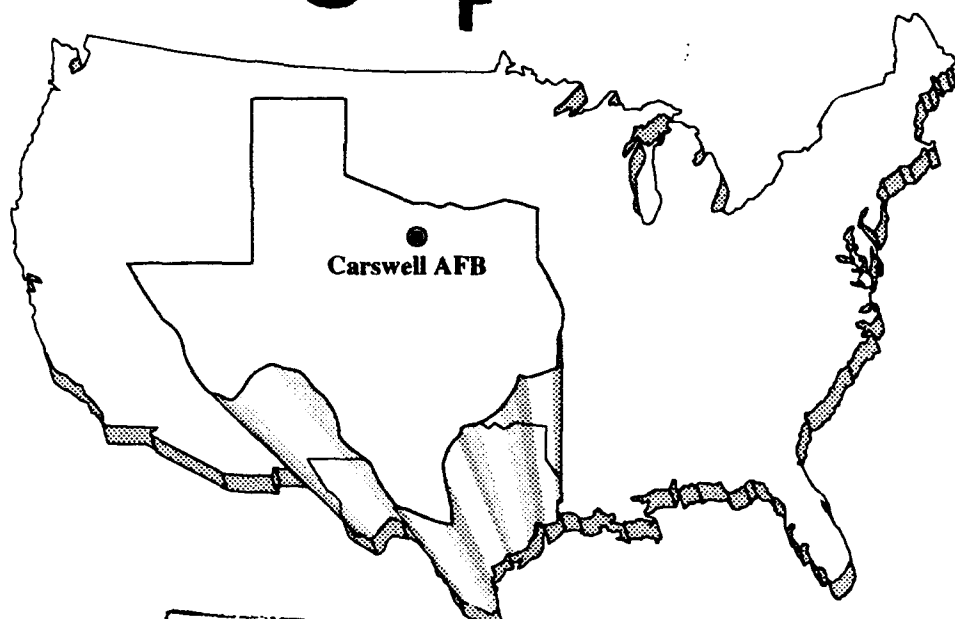


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SOCIOECONOMIC IMPACT ANALYSIS  
STUDY  
March 1994

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DISPOSAL AND REUSE OF  
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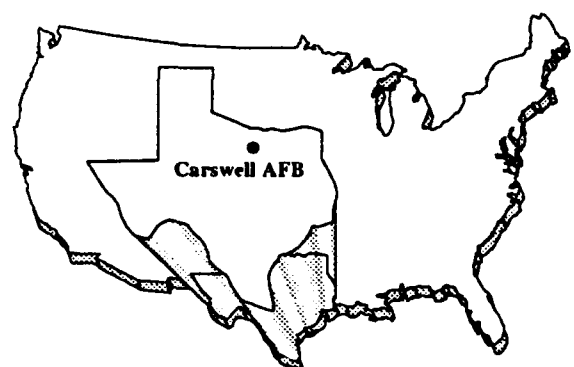


# **SOCIOECONOMIC IMPACT ANALYSIS STUDY**

## **DISPOSAL AND REUSE OF CARSWELL AIR FORCE BASE, TEXAS**

**MARCH 1994**

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## SUMMARY

## SUMMARY

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Carswell Air Force Base (AFB), Texas, was one of the bases recommended by the 1991 Defense Base Closure and Realignment Commission (BRAC II) for closure. The Commission's recommendations were accepted by the President and submitted to Congress on July 12, 1991. As Congress did not disapprove the recommendations in the time given under the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law [P.L.] 101-510, Title XXIX), the recommendations became law. As a result, Carswell AFB closed September 30, 1993.

The 1991 Commission's recommendations, however, included the retention of base property for continued military activities.

The DBCRA procedures were again implemented in 1993 (BRAC III). The 1993 Commission recommended the realignment of several military reserve and guard units to Carswell AFB. Thus, portions of Carswell AFB will be retained within Department of Defense (DOD), as required to support the long-term operations associated with realigning military units. Property not retained within DOD will be considered excess or surplus and made available for disposal and reuse by other federal agencies and nonfederal entities.

DBCRA requires the Secretary of Defense to comply with the National Environmental Policy Act (NEPA) in the implementation of the base disposal and reuse. The Secretary of Defense, through the Air Force, is preparing the required NEPA documents for the base disposal. Consideration of closure is exempted under DBCRA because that decision is final under the statute. The Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas analyzes environmental effects of the disposition of excess property and the subsequent reuse of the base property under alternative redevelopment plans.

This Socioeconomic Impact Analysis Study (SIAS) addresses the socioeconomic effects of realignment and potential reuse of the base. An SIAS for the closure and reuse of Carswell AFB was published in February 1993. However, due to subsequent base closure and realignment commission decisions, the alternatives analyzed in that document are no longer reasonable to support future disposal decisions. This SIAS incorporates the realignment of several DOD organizations to Carswell AFB and includes analyses of reuse alternatives that are consistent with these decisions. This SIAS document replaces the February 1993 SIAS publication and all information and conclusions presented in this document supersede the previous SIAS.

This document is designed to provide assistance to local governments and redevelopment agencies in the development of their reuse plan. The scope



of this study includes economic activity, population, housing, public services, public finance, transportation, and utilities. This document is not required by NEPA.

Carswell AFB is located approximately 8 miles west of downtown Fort Worth, the central city of the Fort Worth Metropolitan Statistical Area (MSA), which had a population of over 1.3 million in 1990. This MSA, which comprises the three counties of Johnson, Parker, and Tarrant in addition to the neighboring Dallas MSA (with a population of over 2.6 million in 1990), is locally referred to as the Metroplex. The majority of the base area (58 percent) falls within the jurisdiction of the city of Fort Worth. Another 25 percent of the base lies within the city of Westworth Village, 9 percent in unincorporated Tarrant County, and the remaining 8 percent is located in the city of White Settlement.

The primary mission of Carswell AFB was to provide a home for the 7th Bomb Wing. The base also supported the 301st Fighter Wing (FW) of the AFRES and numerous other base tenants. The transfer and consolidation of the 7th Bomb Wing activities at Carswell to other Air Force bases in the United States was completed by fall 1993. The base contained an airfield, aviation support areas, commercial areas, industrial areas, a major hospital, residential areas, and other support facilities. The base property includes an off-base military family housing area (Kings Branch) located just southeast of the main base, and an Off-Site Weapons Storage Area, also known as Carswell's ammunition storage annex, was located approximately 5 miles west of the main base.

The 1991 Commission's recommendations provided for the retention of a portion of Carswell AFB to support the continued operations of the Air Force Reserve (AFRES) 301st FW, White House Communications Agency (WHCA), and the continued engine testing activities of Air Force (AF) Plant #4. Approximately 594 AFRES personnel and 30 WHCA personnel are employed on base.

In addition, the 1993 Commission's recommendations provided for the relocation of several DOD organizations from Naval Air Station (NAS) Dallas, (Texas), NAS Memphis, (Tennessee), and NAS Glenview, (Illinois) to Carswell AFB. As a result, portions of Carswell AFB will be designated as the NAS Fort Worth, Joint Reserve Base, and will accommodate the retained AFRES and WHCA activities, as well as the realigned Navy Reserve, Marine Reserve, Army Reserves/Guard, and Air National Guard units. The majority of these military units will relocate from NAS Dallas.

If the other portions of the base are not reused, the excess property would be placed in caretaker status, and most or all of the "mothballed" facilities would be restricted from access. Security and minimal maintenance would provide only limited employment opportunities on the base. A total of 50

direct and 58 secondary jobs would be required to administer caretaker activities. This scenario serves as the closure baseline for this study.

The Fort Worth MSA was considered the Region of Influence (ROI) for purposes of describing and analyzing socioeconomic effects. However, most of the effects from disposal and reuse are expected to occur in Tarrant County, including the communities of Fort Worth, Westworth Village, and White Settlement. Effects would also be experienced in the neighboring communities of Benbrook, Lake Worth, River Oaks, Sansom Park, and Westover Hills. Therefore, the focus of this socioeconomic analysis is concentrated in these areas. Population in the three-county ROI is projected to increase from approximately 1,436,347 at closure in 1993 to 1,832,313 in the year 2013 under post-closure conditions. The post-closure conditions refer to the long-term continuation of the closure baseline and include only the retained (BRAC II) military activities.

This report analyzes the socioeconomic effects of two conceptual plans involving reuse of portions of the base by private and public entities. Both plans are compared to the No-Action/Realignment Alternative during the 20 years following base closure, and, as appropriate, to preclosure or post-closure conditions. Since the realignment and creation of NAS Fort Worth is legally mandated, the military activities associated with this action are included as part of all three alternatives. The alternative plans are as follows:

- Proposed Action
- Mixed Use Alternative.

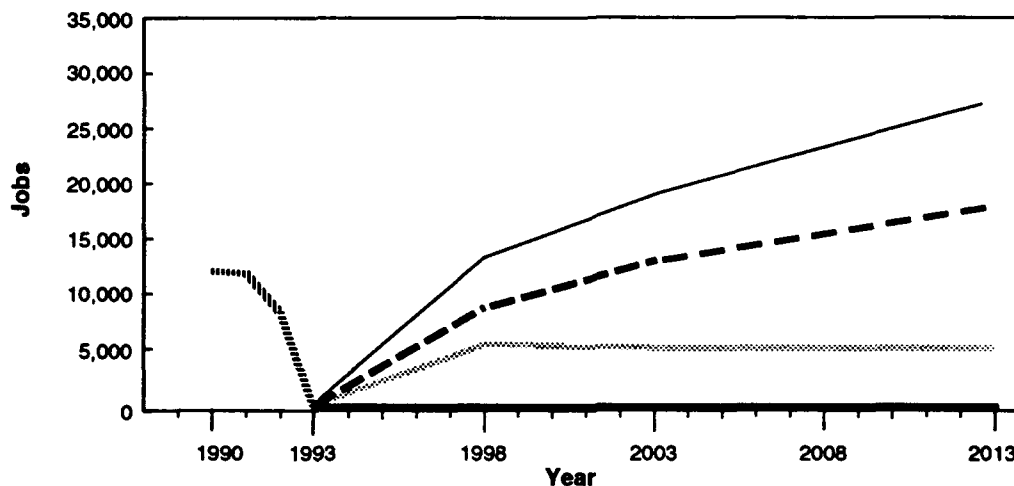
The Proposed Action is based on the community reuse plan developed by the Carswell Redevelopment Authority. The plan focuses on general industrial and business development. The proposal includes development of industrial, commercial, public facilities/recreation, and residential areas, as well as retention of the golf course for civilian use. In addition, the Proposed Action includes the U.S. Department of Justice, Federal Bureau of Prisons' proposal for the reuse of the base hospital and other facilities as a federal medical center complex.

The Mixed Use Alternative contains slightly more civilian reuse acreage than the Proposed Action and provides for civilian aircraft maintenance activities. In addition, this alternative includes residential, commercial, office/industrial, public facilities/recreation, and institutional land uses. Similar to the Proposed Action, the golf course would be retained; however, the base hospital would be converted for public or private use.

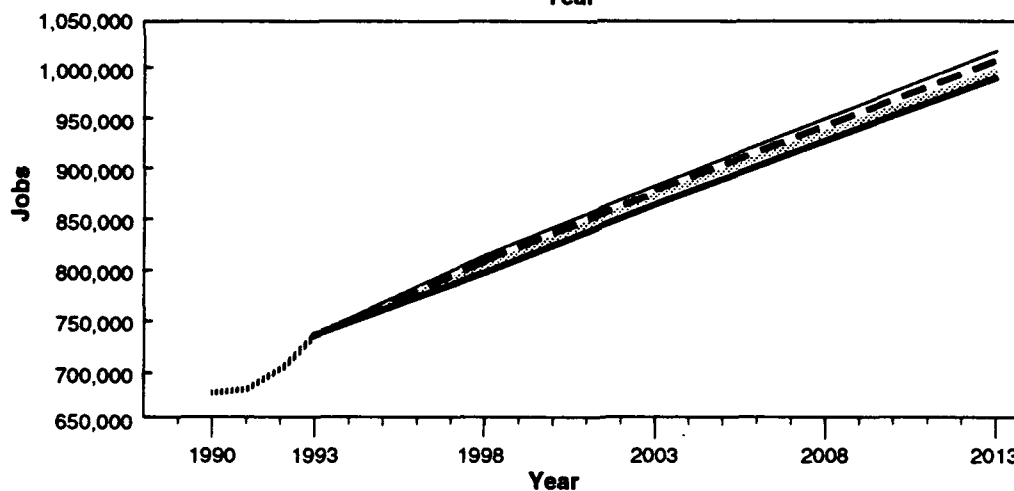
The net effects of the military and civilian reuse on the communities in the vicinity of Carswell AFB would vary with the reuse alternative developed. Figures S-1 and S-2 illustrate the projected profile of future employment and

	1993(a)	1998	2003	2013
Post-closure Conditions	1,497	1,497	1,497	1,497
<b>ALTERNATIVE</b>				
No-Action/Realignment	1,497	5,747	5,621	5,621
Proposed Action	1,497	9,535	13,355	17,315
Mixed Use	1,497	14,349	18,342	27,276

**Reuse-Related  
Employment  
Effects(b)**



**Reuse-Related  
Employment  
Effects(b)**



**Total ROI Employment  
Including Reuse-  
Related Effects**

## EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- No-Action/Realignment
- - - - - Proposed Action
- Mixed Use

## Reuse-Related Employment Effects

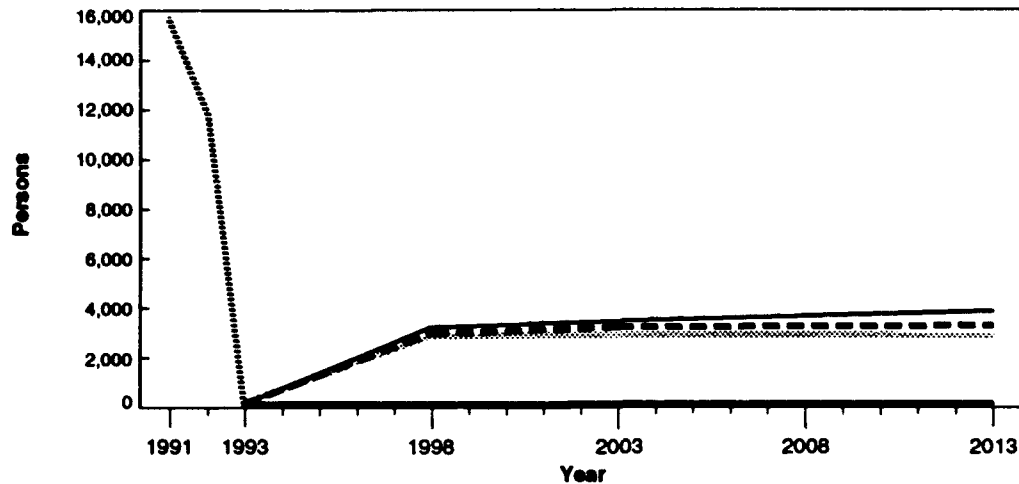
(a) The 1993 values represent total base-related employment under the closure baseline.

(b) Employment effects represent the change in employment over the post-closure conditions.

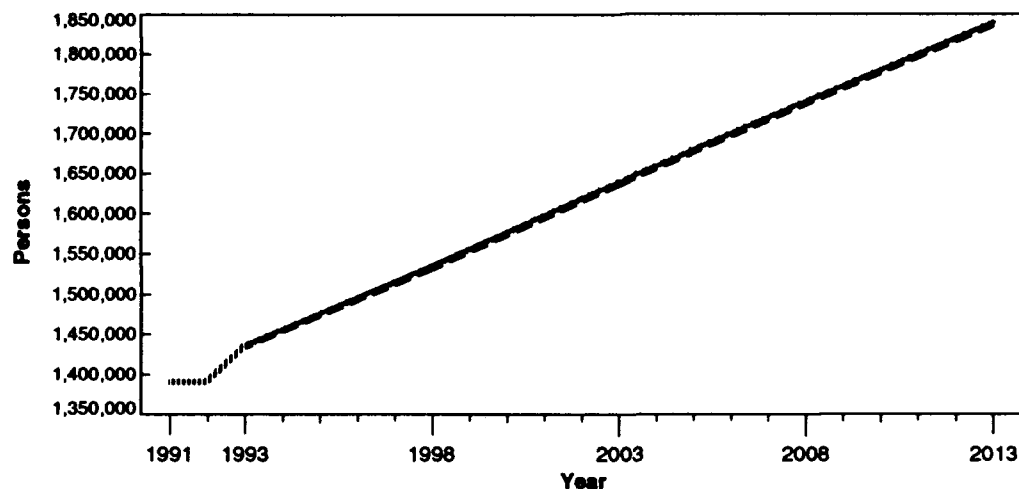
**Figure S-1**

ALTERNATIVE	1993 (a)	1998	2003	2013
No-Action/Realignment	0	2,875	2,872	2,872
Proposed Action	0	3,038	3,195	3,360
Mixed Use	0	3,230	3,401	3,774

**Migratory-Related  
Population  
Effects (b)**



**Migratory-Related  
Population  
Effects (b)**



**Total ROI Population  
Including Migratory-  
Related Effects (c)**

## EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment
- - - - Proposed Action
- Mixed Use

- (a) 1993 represents closure baseline conditions.
- (b) Migratory-related population effects are the persons that would move into the ROI solely as a result of reuse.
- (c) Changes in alternatives are too small to be noticeable on graph.

## Migratory-Related Population Effects

**Figure S-2**

population within the ROI for each of the alternatives over the post-closure conditions. Key findings of this study include the following:

- Under the No-Action/Realignment Alternative, the retained military property would become NAS Fort Worth, Joint Reserve Base. The remainder of the base would continue to be under caretaker status whether or not the U.S. government retains title to the property. Employment associated with the military activities, over the post-closure conditions, would reach 3,257 direct jobs and 2,490 secondary jobs by 1998, dropping to 3,257 direct and 2,364 secondary jobs by the year 2013 as a result of projected decreases in construction activities after 1998. The employment associated with the caretaker activities would remain constant during the 20-year analysis period: 50 direct jobs and 58 secondary jobs. Population is projected to increase in response to these employment opportunities by 2,872 persons over post-closure conditions by 2013.
- Under the Proposed Action, 8,308 direct jobs would be generated by 2013, with an additional 9,007 secondary jobs by the year 2013 over post-closure conditions. ROI population would increase in response to these employment opportunities by 3,360 over post-closure conditions by 2013. Fiscal shortfalls due to base closure would be reversed for the majority of the jurisdictions studied with the exception of local school districts, where the loss of P.L. 81-874 funding would not be offset by increases in other revenue sources.
- The Mixed Use Alternative would generate 12,664 direct jobs and 14,612 secondary jobs by the year 2013 over post-closure conditions. Population is projected to increase in response to these employment opportunities by 3,774 over post-closure conditions by 2013.

Table S-1 summarizes the comparative findings of this study for each issue area and each alternative after 20 years. The table also displays the post-closure conditions to provide a benchmark for comparison.

**Table S-1. Comparison of Alternatives**  
**Page 1 of 2**

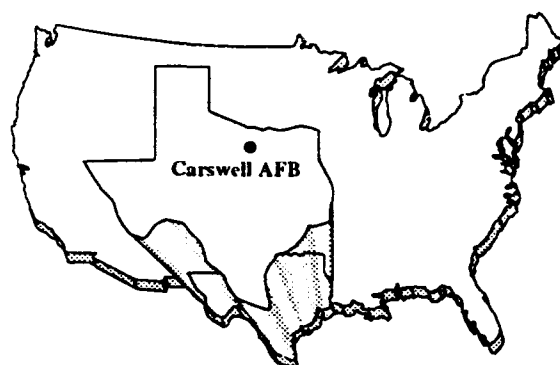
Change from Post-Closure Conditions <sup>(a)</sup>			
Resource	Post-Closure Conditions	No-Action/Realignment Alternative	Proposed Action
<b>Economic Activity</b>			
Regional Employment	1,497 jobs	5,621 jobs	17,315 jobs
Regional Earnings	\$37,993,373	\$122,303,087	\$352,667,167
Population	Zero migratory population	An addition of 2,872 people	An addition of 3,360 people
Housing	Zero migratory housing demand	Additional housing demand of 1,195 units	Additional housing demand of 1,363 units
<b>Public Services<sup>(b)</sup></b>			
<b>General Government, Police, and Fire</b>			
ROI	Zero migratory public service demand	2,756 migratory population served	3,165 migratory population served
Tarrant County		2,756 persons served	3,165 persons served
Fort Worth		1,862 persons served	2,057 persons served
River Oaks		38 persons served	41 persons served
Westover Hills		3 persons served	3 persons served
Westworth Village		252 persons served	252 persons served
White Settlement		81 persons served	87 persons served
Rest of County		416 persons served	615 persons served
<b>Education</b>			
ROI	Zero migratory enrollments	281 new students	308 new students
Castleberry ISD		32 students	33 students
Fort Worth ISD		227 students	250 students
Lake Worth ISD		9 students	10 students
White Settlement ISD		13 students	15 students
<b>Health</b>			
	Carswell AFB hospital remains closed	Sufficient capacity to meet increased health care needs	Hospital renovated to provide for 300 federal inmates. Sufficient capacity to meet increased health care needs
			Sufficient capacity to meet increased health care needs

Notes: (a) All effects presented in this table apply specifically to the year 2013, but may be interpreted as long-duration effects that extend indefinitely beyond 2013. Migratory-related effects include all effects associated with the population that would move into the ROI as a result of a reuse alternative.  
 (b) Minimal area-generated demands due to increases in public service jurisdiction may occur as a result of the Proposed Action and reuse alternatives. These minimal increases are excluded from this summary.  
 ISD = Independent School District.  
 ROI = Region of Influence.

Table S-1. Comparison of Alternatives  
Page 2 of 2

Resource	Post-Closure Conditions	No-Action/Realignment Alternative	Proposed Action	Mixed Use Alternative
Public Finance <sup>(b)</sup>				
Tarrant County	Shortfall of \$613,680	Shortfall of \$503,440	Shortfall of \$487,080	Shortfall of \$473,160
Benbrook	Shortfall of \$40,392	Shortfall of \$34,848	Shortfall of \$34,452	Shortfall of \$33,858
Fort Worth	Shortfall of \$857,472	Shortfall of \$740,872	Shortfall of \$723,721	Shortfall of \$7,928
Lake Worth	Shortfall of \$1,350	Shortfall of \$1,200	Shortfall of \$1,200	Shortfall of \$1,050
River Oaks	Shortfall of \$4,880	Shortfall of \$4,272	Shortfall of \$4,224	Shortfall of \$4,176
Sansom Park	Shortfall of \$3,942	Shortfall of \$1,200	Shortfall of \$3,483	Shortfall of \$3,402
Westover Hills	Shortfall of \$2,496	Shortfall of \$1,920	Shortfall of \$1,920	Shortfall of \$1,920
Westworth Village	Shortfall of \$22,516	Shortfall of \$21,125	Shortfall of \$21,125	Shortfall of \$21,086
White Settlement	Shortfall of \$1,778	Shortfall of \$1,616	Shortfall of \$1,604	Shortfall of \$1,592
Castleberry ISD	Shortfall of \$107,359	Shortfall of \$41,567	Shortfall of \$39,530	Shortfall of \$35,456
Fort Worth ISD	Shortfall of \$1,947,500	Shortfall of \$1,577,975	Shortfall of \$1,545,223	Shortfall of \$1,515,319
Lake Worth ISD	Shortfall of \$196,238	Shortfall of \$183,782	Shortfall of \$182,417	Shortfall of \$179,687
White Settlement ISD	Shortfall of \$576,334	Shortfall of \$558,888	Shortfall of \$556,242	Shortfall of \$554,919
Other Relevant Resources				
Transportation	No change in base-related traffic on local roads. Increases are projected from other sources.	Traffic increases on local roads due to realignment would not degrade LOS to unacceptable levels.	Traffic increases on local roads due to development would not degrade LOS to unacceptable levels.	Traffic increases on local roads due to development would not degrade LOS to unacceptable levels.
Utilities	No change in base-related demand for water, wastewater treatment, solid waste disposal, and energy. Increased system-wide and baseline growth is projected.	Increased utility use could be accommodated by planned utility systems.	Increased utility use within local forecasts of demand could be accommodated by planned utility systems.	Increased utility use within local forecasts of demand could be accommodated by planned utility systems.

Notes: (a) All effects presented in this table apply specifically to the year 2013, but may be interpreted as long-duration effects that extend indefinitely beyond 2013.  
 (b) Migratory-related effects include all effects associated with the population that would move into the ROI as a result of a reuse alternative.  
 In the case of post-closure conditions, projected shortfalls assume there are no offsetting changes in revenues or service delivery standards. With reuse, however, additional revenues attributable to new residents are accounted for in the projection of net fiscal affects.  
 ISD = Independent School District.  
 LOS = level of service.  
 ROI = region of influence.



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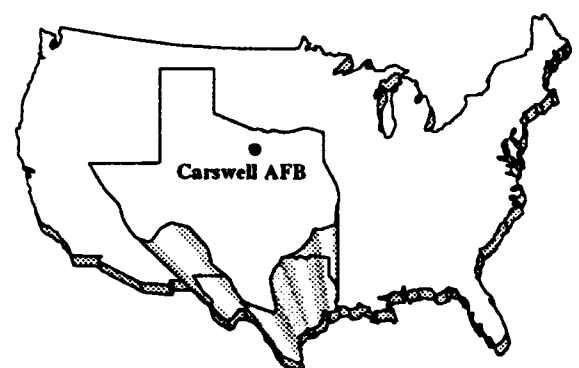
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# **CHAPTER 1**

## **INTRODUCTION**

## 1.0 INTRODUCTION

---

Chapter 1 presents the purpose of this study, briefly discusses the reason for and nature of the disposal and reuse of Carswell Air Force Base (AFB), reviews results of previous base closures, and defines the potential reuse alternatives in terms relevant to the analysis of socioeconomic effects.

This report is organized to provide an assessment of the socioeconomic characteristics and effects of base operation, the effects of alternative civilian reuse scenarios on the region, and the conditions for activities related to the site. The remainder of the report is as follows:

- Chapter 2 defines the Region of Influence (ROI) and provides the community setting.
- Chapter 3 establishes the preclosure reference and closure conditions for the area at base closure, which include retained military activities and caretaker activities.
- Chapter 4 evaluates the effects of alternative reuse plans and compares them to the post-closure conditions and the No-Action/Realignment Alternative.

### 1.1 PURPOSE OF THE STUDY

The Socioeconomic Impact Analysis Study (SIAS) focuses on the socioeconomic effects resulting from the disposal and potential reuse of Carswell AFB. The scope of issues addressed includes economic activity, population, housing, and other major issues of local concern, such as public services, public finance, transportation, and utilities. These factors substantially influence the character of communities in the vicinity of the base and are important to local residents. The analysis of these issues is intended to provide local planning officials with the necessary information with which to plan for the reuse of Carswell AFB. The SIAS is not a National Environmental Policy Act (NEPA) document.

The Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas analyzes the environmental impacts associated with base disposal and reuse under a range of potential reuse alternatives and was initiated to fulfill NEPA requirements that apply to federal actions, such as the decisions for disposition of Carswell AFB. Socioeconomic factors, such as changes in economic activity, employment, and population, are addressed within the Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas only from the perspective of their potential effects on the biophysical environment.

Changes in economic activity, particularly in regional spending and employment, may lead to changes in area population, public service demand, and vehicular traffic on the area's road network. These effects, in turn, have the potential for beneficial or adverse environmental consequences on land use, air quality, water quality, noise, and biological and cultural resources.

## **1.2 CLOSURE OF CARSWELL AFB**

In light of the changing international political scene and the resultant shift toward a reduction in defense spending, the Department of Defense (DOD) must realign and draw down its forces. The Department of the Air Force has been tasked under the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law [P.L.] 101-510, Title XXIX) to identify the facilities, properties, and installations that are no longer essential to support the limited force structure authorized by Congress. The Secretary of Defense then provides DOD closure and realignment recommendations to the Defense Base Closure and Realignment Commission formed as a result of the DBCRA.

The 1991 Defense Base Closure and Realignment Commission (herein referred to as BRAC II) recommended a list of military bases for closure or realignment that was accepted by the President and submitted to Congress on July 12, 1991. This recommended closure and realignment list was not disapproved by Congress within the time given under the statute to do so. Therefore, under DBCRA, the recommendations became law. The closure of Carswell AFB was part of the BRAC II list. The 1991 closure decisions, however, allowed for the retention of Air Force Reserve (AFRES) and White House Communications Agency (WHCA) operations within a portion of the on base property. Carswell AFB closed in September 1993.

The DBCRA procedures were again implemented in 1993 (herein referred to as BRAC III), and the recommendations became law on September 30, 1993. The BRAC III recommendations provided for the realignment of several DOD organizations from Naval Air Station (NAS) Dallas (Texas), NAS Memphis (Tennessee), and NAS Glenview (Illinois) to Carswell AFB. As a result, portions of Carswell AFB will be retained within DOD and designated as the NAS Fort Worth, Joint Reserve Base; NAS Fort Worth will accommodate the retained AFRES units, as well as the realigned Navy Reserves, Marine Reserves, Army Reserves/Army National Guard, and Air National Guard units. The majority of these military units will relocate from NAS Dallas. The Navy will become the host organization for the retained and realigning reserve and national guard tenant units. The retained and realigned military reuse activities have been included in the military land use area and incorporated into each reuse alternative in order to provide a comprehensive analysis of disposal and reuse. Property and facilities that

are not a part of the military reuse area will be considered excess or surplus, and will be made available for civilian reuse.

One comprehensive plan reflecting the BRAC III recommendation has been provided to the Air Force for the disposal and reuse of Carswell AFB. The reuse proposal, submitted by the Carswell Redevelopment Authority (CRA), represents the reuse concepts of the CRA and the U.S. Department of Justice, Federal Bureau of Prisons (FBOP), and integrates the reuse plans of DOD. The plan focuses on development of the NAS Fort Worth, a federal medical center complex and various civilian land uses, including industrial, residential, commercial, and public facilities/recreation.

The Air Force needs to dispose of Carswell AFB property and facilities determined to be excess to the needs of DOD. The disposal will be through transfer to another federal agency, public benefit conveyance to an eligible entity, negotiated sale to a public body, and/or sealed bid or auction to the general public. This disposal will be in compliance with DBCRA, which has provided the Secretary of the Air Force with many of the powers of the Administrator of the General Services Administration, the Federal Property and Administrative Services Act of 1949, and the Surplus Property Act of 1944.

The closure and realignment action involves consolidation of Air Force activities and personnel transfers to other Air Force bases in the United States or a reduction in military forces through retirement of weapon systems and reducing military manpower levels (U.S. DOD, 1991).

The projected post-closure conditions and the military realignment identified for this study occur once the base has gone into "caretaker status" after the phase-down of residual operations at the base and its subsequent closure. Caretaker status includes provisions for security and limited maintenance to keep unused base facilities in "mothballed" condition. The post-closure conditions (BRAC II only) refer to the long-term continuation of the closure conditions, which comprise the retained military and caretaker activities, but does not include the realignment actions.

Analysis of the realignment actions and establishment of NAS Fort Worth, referred to as the No-Action/Realignment Alternative, provides an assessment of near- and long-term conditions in communities near the base. This provides a benchmark for comparison of the socioeconomic consequences of alternative plans for civilian reuse.

### 1.3 PREVIOUS BASE CLOSURES

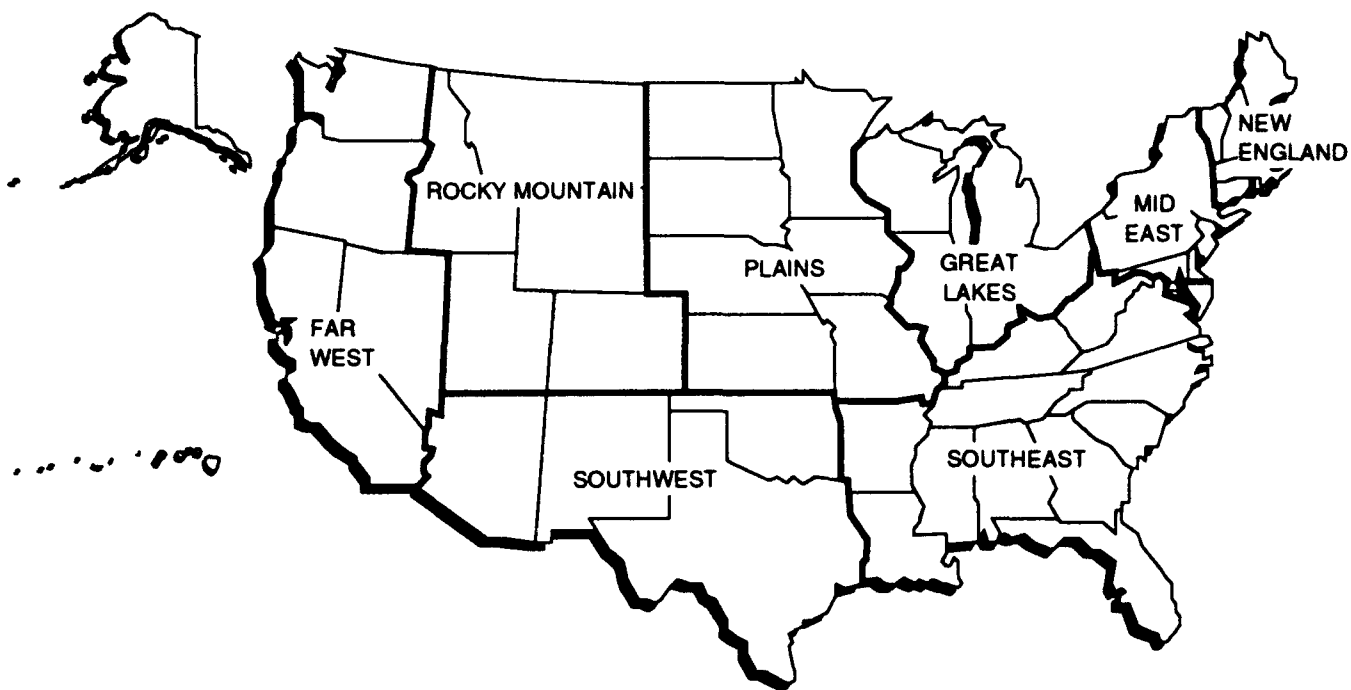
Because of the potential for severing long-standing social and economic relationships, base closures can be a very disrupting experience for the host communities. The future state of the local economy is always of concern, although many communities affected by base closures have successfully implemented installation reuse plans. A recent study completed by the President's Economic Adjustment Committee indicates that opportunities exist for successful conversion of military installations to civilian use (U.S. DOD, Office of Economic Adjustment, 1990).

Included in the study was a review of the experiences of nearly 100 communities that lost a local military base between 1961 and 1990. Several important findings resulted from this review:

- Military jobs that were transferred out of the local communities numbered almost 136,800. These transfers represented permanent long-term reductions in the economic base of the communities.
- Conversion to civilian use led to a total of 158,100 direct jobs, more than replacing the 93,400 DOD civilian and contractor jobs lost due to the closing.
- Fifty-seven former bases became the seat of a number of 4-year colleges, community colleges, and post-secondary vocational-technical programs. These schools presently accommodate 73,200 college students, 25,000 secondary vocational-technical students, and 62,200 trainees.
- Seventy-five former bases are host to industrial parks or plants, and 42 established municipal or general aviation airports.

The study concluded that in the short term, closure can have substantial negative effects on the local economy. The difficult transition period generally lasts 3 to 5 years (U.S. DOD, Office of Economic Adjustment, 1990).

Figure 1.3-1 provides employment statistics for 48 Air Force installation closure and reuse actions completed between 1961 and 1990. These Air Force actions resulted in the transfer of approximately 100,000 military personnel. About 28,500 on-base civilian jobs were lost in these actions. More than 70,000 civilian jobs were gained due to reuse of the sites. Considering individual installations, in most cases the number of civilian jobs in 1990 was greater than when the base was under military control. In only about 20 percent of the cases, however, does the number of new civilian jobs exceed the number of civilian and military jobs lost as a result of base closure.



REGION	No. of Bases Closed	Military Jobs Transferred	Civilian Jobs Lost	New Civilian Jobs on Base
1. New England	5	11,241	921	9,947
2. Mid East	3	4,064	11,085	4,298
3. Great Lakes	6	7,595	2,453	10,380
4. Plains	7	18,502	3,129	9,530
5. Southeast	10	22,103	3,349	20,252
6. Southwest	9	24,472	6,058	10,942
7. Rocky Mountain*	3	3,663	336	307
8. Far West	5	8,539	1,093	4,421
Total	48	100,179	28,424	70,077

\* Data for one AFB not available.

Source: U.S. Department of Defense, Office of Economic Adjustment, 1990.

## **Summary of Air Force Installation Closure and Reuse Actions Completed between 1961 and 1990**

**Figure 1.3-1**

## 1.4 REUSE OPTIONS

To help identify potential socioeconomic effects associated with the disposal and reuse of Carswell AFB, this study addresses a range of potential reuse alternatives. The Navy provided support to the realignment analysis since the agency will become the host organization for NAS Fort Worth. For the purpose of conducting the required analysis, the Air Force has adopted the redevelopment plan developed by the CRA as the Proposed Action. In addition to the Proposed Action, two alternatives have been identified: the Mixed Use Alternative and the No-Action/Realignment Alternative. Provided that the realignment is legally mandated, each alternative includes the effects of this action. The differences among the three alternatives, therefore, pertain to the reuse of excess property. Actual decisions on civilian reuse of the disposed property will be made by its recipients subsequent to disposal. Civilian reuse refers to redevelopment of property that was excess to DOD.

The No-Action/Realignment Alternative is discussed in Section 1.4.1 and, represents realignment and establishment of NAS Fort Worth. The Proposed Action for civilian reuse of Carswell AFB is based on the reuse plan developed by the CRA; it is discussed in Section 1.4.2. The Mixed Use Alternative is discussed in Section 1.4.3. Section 1.4.4 discusses Other Land Use Concepts, which include independent proposals for specific facilities or portions of the base property that are not included within the comprehensive reuse alternatives but could be implemented in conjunction with any of the reuse alternatives.

Under the various reuse alternatives, the acreage proposed to be utilized includes 2,619 acres of base property and retained leased property. Table 1.4-1 lists the proposed reuse activities by type of use and the proposed acreage of each use (reported acreages throughout this document are approximate).

### 1.4.1 No-Action/Realignment Alternative

The description of the traditional No-Action Alternative assumes the long-term continuation of the post-closure conditions without implementation of the proposed project, to provide a basis for comparison among the effects of the different alternatives.

The No-Action/Realignment Alternative in this analysis includes the BRAC II and the BRAC III recommendations as mandated under DBCRA. As such, the No-Action/Realignment Alternative includes the change in conditions over the closure conditions associated with the realignment and establishment of NAS Fort Worth.

**Table 1.4-1. Land Use Acreage by Alternative**

<b>Land Use</b>	<b>No-Action/ Realignment Alternative</b>	<b>Proposed Action</b>	<b>Mixed Use Alternative</b>
<b>Base Property (including Kings Branch and Off-Site WSA)</b>			
Military	1,823	1,820	1,805
Aviation Support	0	0	18
Industrial	0	247	0
Office/Industrial Park	0	0	90
Institutional			
Medical	0	0	44
Prison	0	95	0
Commercial	0	100	116
Residential	0	45	308
Public Facilities/Recreation	0	248	174
Caretaker Status	732	0	0
<b>Retained Leased Property</b>			
Military	64	64	64
<b>Total</b>	<b>2,619</b>	<b>2,619</b>	<b>2,619</b>

WSA = Weapons Storage Area.

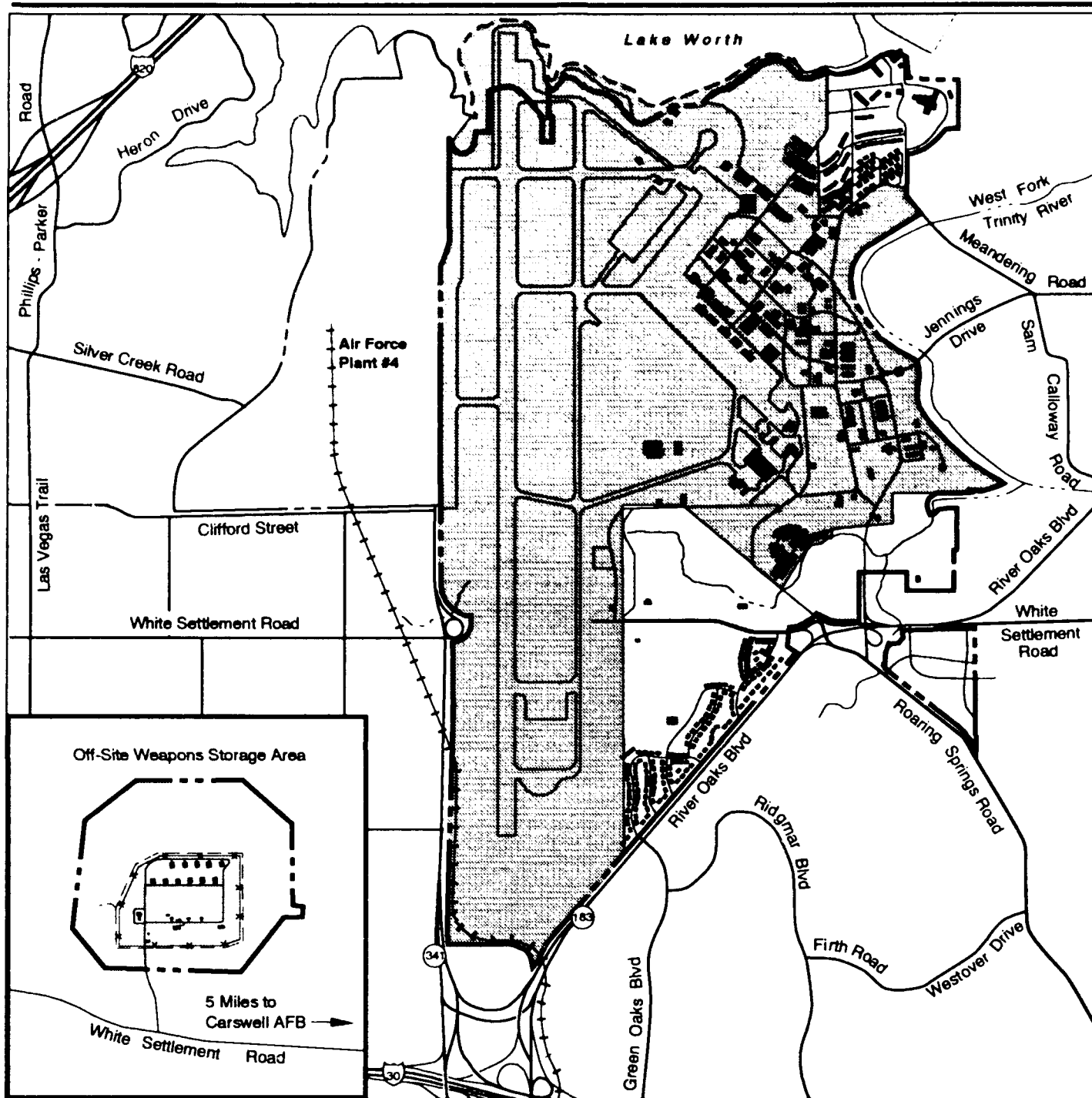
The military land use area consists of one parcel, totaling 1,887 acres or 72 percent of the base area, which includes 64 acres of land adjacent to Lake Worth leased from the city of Fort Worth, and 1,823 acres retained within DOD (Figure 1.4-1). It is assumed that this area would continue to be leased to support military operations.

The run-up stations and related property west of the airfield would be transferred within the Air Force for continued use by AF Plant #4. The remaining military land use area would be transferred to the U.S. Navy for the establishment of NAS Fort Worth. The new air station would become a government defense facility to train and equip military reserve and guard air crews and aviation ground support crews.






The military land use area would include the airfield and the central portion of the base area to support the military guard and reserve units. The military land use area includes the aircraft parking apron, hangars, Air Traffic Control Tower (ATCT), Airport Rescue and Fire Fighting (ARFF), base operations and logistics facilities, weapons storage area (WSA), small arms firing range, dormitories, recreational areas, and other facilities.

NAS Fort Worth would reuse 94 percent of facility space, of which 40 percent would undergo some renovation. The remaining facilities would be





#### EXPLANATION

-  Military
-  Caretaker Status
-  Carswell AFB Boundary
-  Air Force Plant #4 Boundary
-  Leased Property



#### No-Action/Realignment Alternative

Figure 1.4-1

demolished with some new construction projects required to consolidate the military operations.

Although the retained AFRES construction requirements would be minimal, additional construction would be required to facilitate realigned DOD organizations within the military area. Planned construction includes modifications to facilities including nose-dock hangars, airfield infrastructure, maintenance shops, medical clinic, and child care center. New construction would include a reserve training center, guard training facilities, a jet-engine hush house and test cell, and other support facilities. Perimeter fences and/or security entry gates would be provided to ensure security within the naval air station. These projects would be complete and fully operational by 1998.

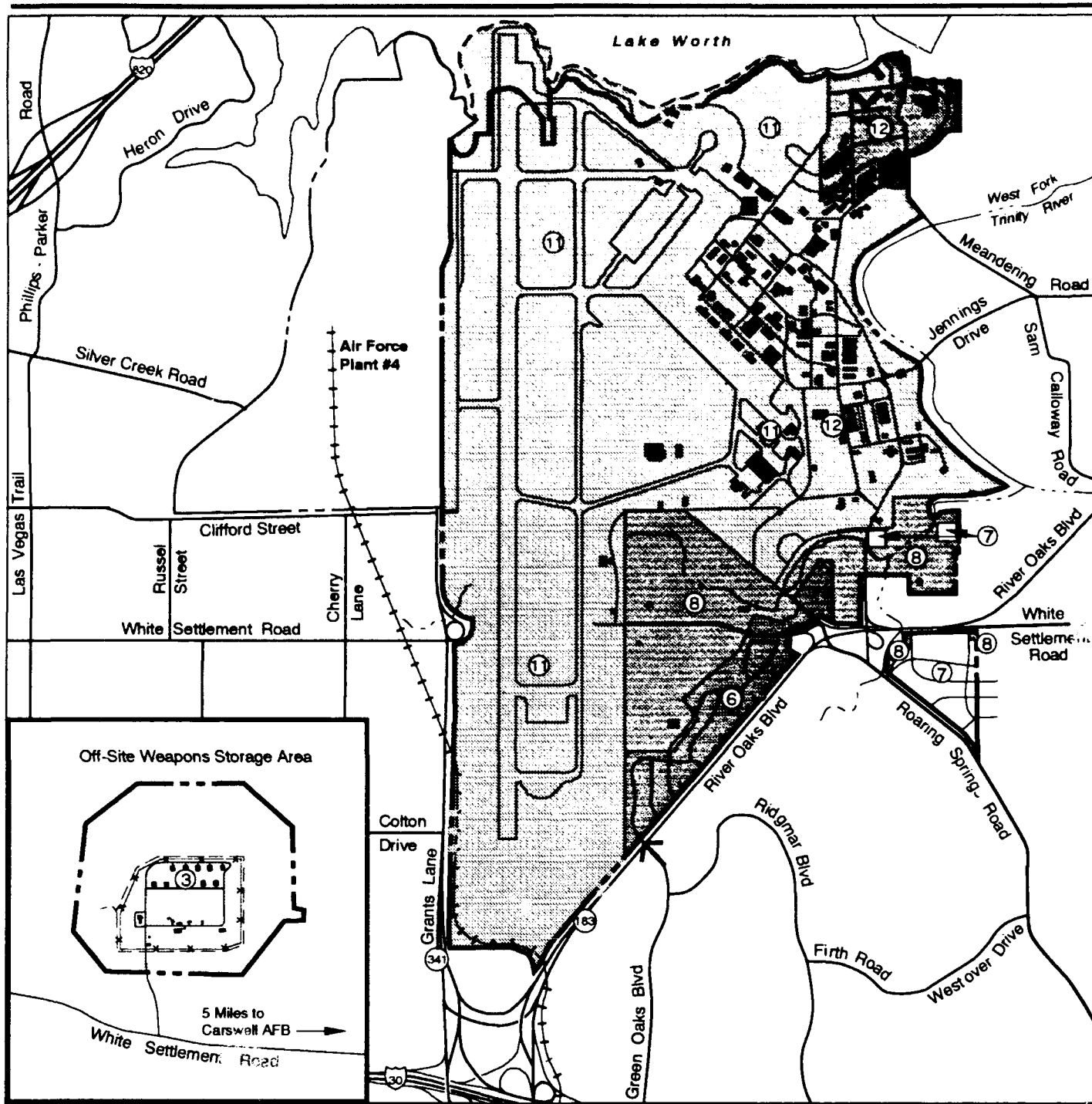
The airfield would be operated by the Navy, who would manage the development and operations in accordance with Navy regulations. No civilian aviation activities would occur under the No-Action/Realignment Alternative.

The remaining 732 acres of the base would be placed under long-term caretaker status, whether or not the U.S. government retains title to the property and would be preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety). Caretaker activities would consist of administering resource protection, grounds maintenance, utilities operations as necessary, and building care. The future land uses and levels of maintenance within these portions of the base would be as follows:

- Maintain structures to limit deterioration
- Isolate or deactivate utility distribution lines on base
- Provide limited maintenance of roads to ensure access
- Provide limited grounds maintenance of open areas to eliminate fire, health, and safety hazards
- Maintain golf course in such a manner as to facilitate economical resumption of use.

#### **1.4.2 Proposed Action**

The Proposed Action is a comprehensive reuse plan for military realignment and long-term operations, as described under the No-Action/Realignment Alternative, and various civilian non-aviation activities. Civilian land uses under the Proposed Action include industrial, institutional (prison), commercial, residential, and public facilities/recreation uses (Figure 1.4-2). The total acreage for each land use category is shown in Table 1.4-1.



# EXPLANATION

① Airfield *	⑤ Institutional (Educational) *	⑩ Vacant Land *
② Aviation Support *	⑥ Commercial	⑪ Military
③ Industrial	⑦ Residential	⑫ Institutional (Prison)
③ Office/Industrial Park *	⑧ Public Facilities/ Recreation	--- Carswell AFB Boundary
④ Institutional (Medical) *	⑨ Agriculture *	--- Air Force Plant #4 Boundary
		--- Leased Property
		← Improved Access

## Proposed Action

Figure 1.4-2

**Military.** The military land use area would total 1,884 acres or 72 percent of the base property. It is assumed that the lease with Fort Worth for 64 acres of land north of the base would be retained to support the military operations. The military reuse activities would be the same as those described in the No-Action/Realignment Alternative, except that a 3-acre parcel (Building 1231) would be converted to civilian reuse. The Navy ATCT would accommodate limited civilian transient operations associated with the FBOP.

**Industrial.** The proposed industrial land use covers 247 acres or 9 percent of the base property, and comprises the Off-Site WSA. The Off-Site WSA would be reused for specialized storage (i.e., munitions storage, microfilm/records storage) that requires secured facilities, limited access, and minimal facility modification. It has been assumed for analysis purposes that munitions stored at the Off-Site WSA would require safety buffer zones similar to the 2,100-foot radius explosive safety quantity distances (QDs) that were in effect under preclosure conditions. These QDs would extend outside the base property within a 264-acre restrictive use easement. All the building square footage in the area would be retained and the land area would be fully operational by 1998.

**Institutional (Prison).** The institutional (prison) land use consists of 95 acres or 4 percent of the base property, and includes the FBOP's reuse of the base hospital for a federal medical center complex and the development of minimum- and medium-security housing on a 92-acre parcel in the northeast quadrant of the base. In addition, FBOP has requested 3 acres, including Building 1231 in the central portion of the base, for a regional showroom, regional distribution center, and warehouse of products produced by Federal Prison Industries (UNICOR).

The federal medical center complex would provide inpatient medical care for approximately 300 federal inmates. The hospital would be renovated to provide security. Some of the housing units would be demolished and the remaining units would be used by federal inmates receiving outpatient care from the medical center or awaiting transfer back to their original institution. New construction would provide for additional housing and other support facilities to accommodate a total of about 800 minimum- and medium-security inmates.

The buildings would be surrounded by security fencing except for the minimum security housing area west of the hospital, which would visually separate the prison from adjacent land uses. The mature trees on the site would be retained to the maximum extent possible to provide additional security provisions. Security fencing for the buildings would include a buffer zone, where feasible; electronic alarm systems; vehicular patrol; outdoor ground illumination; two fences; and a single perimeter road. The institutional development would be complete by 1998.

**Commercial.** The proposed commercial use of 100 acres or 4 percent of the base property, would be in the southern portion of the base between State Highway (SH) 183 and the golf course. The area would be developed for office, retail, and light industrial uses. Office development would consist of single- to multiple-story buildings adjacent to the golf course. Retail and light industrial uses would be along SH 183. The only building retained within the commercial reuse areas would be a single-family residence listed on the National Register of Historic Places (NRHP). The other facilities would be demolished and replaced with new development. This development would be complete by the year 2013.

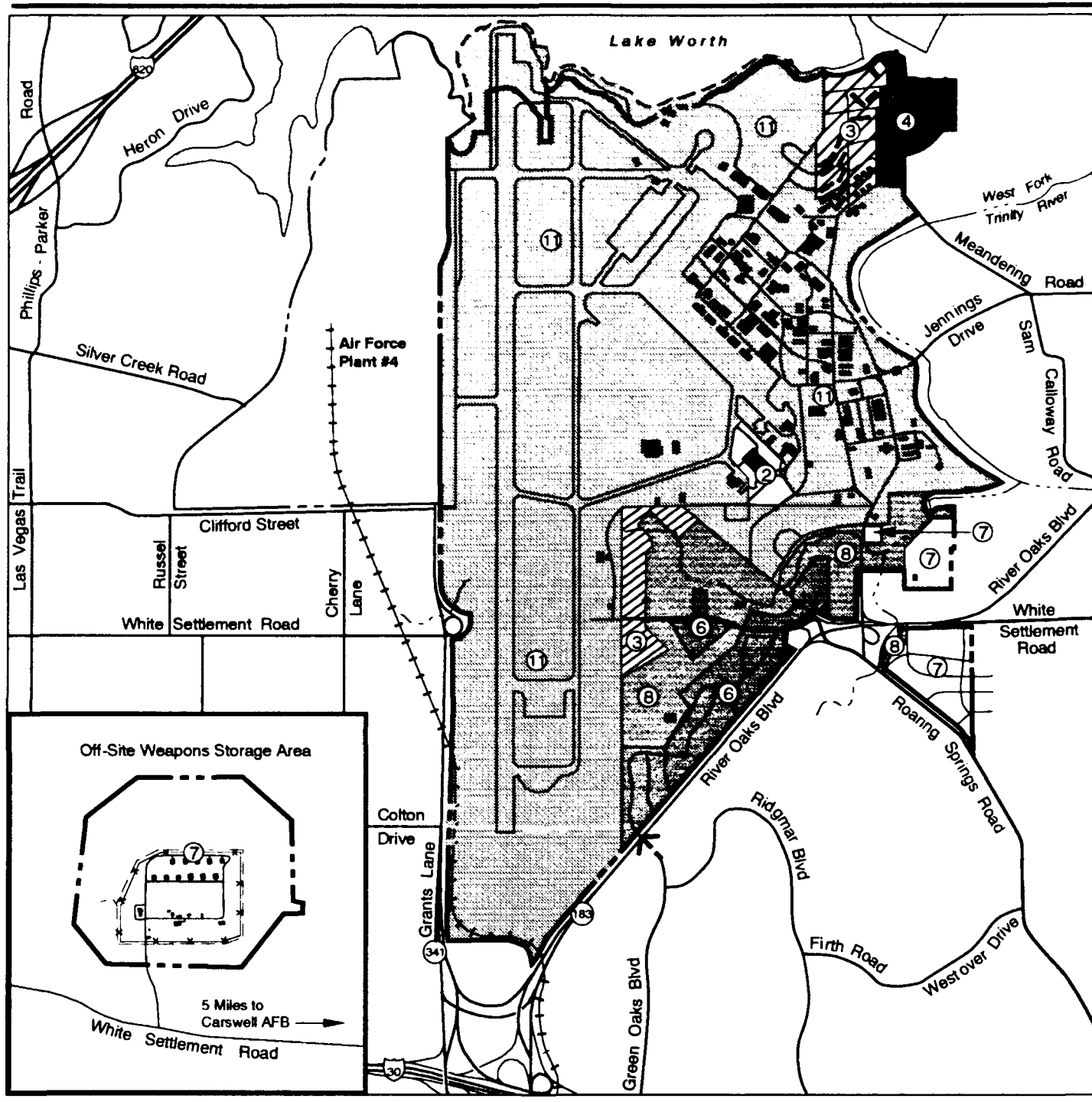
**Residential.** The residential land use contains 45 acres or approximately 2 percent of the base acreage, and is located within three areas: Kings Branch, a noncontiguous parcel located immediately to the southeast of the base, and two other small areas containing two houses located in the southeastern portion of the base. The housing units within Kings Branch would either be sold and relocated off site, or demolished. The replacement housing would include up to 130 single-family units. The development of the residential parcels is projected to be complete by 1998.

**Public Facilities/Recreation.** The public facilities/recreation land uses include three areas on base consisting of 248 acres or 9 percent of the base property. The first area includes the golf course, related open space, and the flood-prone areas associated with the Farmers Branch Creek in the south-central portion of the base. The golf course and open area surrounds two single-family residences and includes a private cemetery and a child care center. The cemetery would be retained and left undisturbed, and the child care center would be converted to a city hall complex. A driving range would be developed on the golf course adjacent to the south side of White Settlement Road.

The second area is a narrow parcel of land along the western boundary of the Kings Branch housing area, which includes a portion of the 100-year floodplain associated with the Kings Branch of the West Fork Trinity River. The third parcel includes a house in the northeastern corner of the Kings Branch housing area, which would be retained for reuse as a public library. No new building construction is associated with these areas.

#### **1.4.3 Mixed Use Alternative**

The Mixed Use Alternative differs from the Proposed Action by providing aviation support with civilian aircraft maintenance and additional office/ industrial park and residential uses (Figure 1.4-3). The base hospital would be converted to a private or public hospital. The military land use would be similar to the No-Action/Realignment Alternative. The total acreage for each land use category is shown in Table 1.4-1.



#### EXPLANATION

- |                           |                                 |                                 |
|---------------------------|---------------------------------|---------------------------------|
| ① Airfield *              | ⑤ Institutional (Educational) * | ⑩ Vacant Land *                 |
| ② Aviation Support        | ⑥ Commercial                    | ⑪ Military                      |
| ③ Industrial *            | ⑦ Residential                   | ⑫ Institutional (Prison) *      |
| ③ Office/Industrial Park  | ⑧ Public Facilities/ Recreation | --- Carswell AFB Boundary       |
| ④ Institutional (Medical) | ⑨ Agriculture *                 | --- Air Force Plant #4 Boundary |
|                           |                                 | --- Leased Property             |
|                           |                                 | ← Improved Access               |
- 0 650 1300 2600 Feet
- ★ Standard land use designation not applicable to this figure.

#### Mixed Use Alternative

Figure 1.4-3

**Military.** The military land use area would total 1,869 acres or 71 percent of the base property. It is assumed that the lease with Fort Worth for 64 acres of land north of the base would be retained to support the military operations. The military reuse activities would be the same as those described in the Proposed Action, except that a 15-acre parcel would be converted to civilian reuse and Building 1231 would be retained for continued military use. When compared to the Proposed Action, there would be a small increase in building renovation to replace the building space lost due to the slight reduction in available military land use area. Limited civilian use of the airfield for maintenance operations would be controlled by the Navy ATCT.

**Aviation Support.** The aviation support land use area comprises approximately 18 acres or less than 1 percent of the base property and includes a maintenance hangar, avionics shop, and other minor related facilities. Reuse activities and functions would include maintenance of turboprop and jet air-carrier aircraft or modification of these aircraft.

No demolition or construction activities are anticipated. Aviation support reuse would be complete by 1998.

**Office/Industrial Park.** The office/industrial park land use includes 90 acres or 3 percent of the base property in two areas. The first area is adjacent to the golf course, and the second is adjacent to the west side of the base hospital. The office/industrial park uses could include corporate office, research and development, and light industrial/manufacturing, and would be organized in a campus- or park-like setting. All facilities would be demolished. New office construction would probably range from one- to three-story structures. Each area would likely be developed by a single entity for a mixed-use office/industrial park. The area adjacent to the golf course would be developed by the year 2003, and the area west of the base hospital would be developed by 2013.

**Institutional (Medical).** The institutional (medical) land use consists of 44 acres or 2 percent of the base property in the northeast corner of the base and would utilize the base hospital as a public or private hospital with associated medical and medical-training uses. The hospital could be used soon after property disposal and new development could continue throughout the 20-year analysis period.

**Commercial.** The area proposed for commercial reuse covers 116 acres or 4 percent of the base area and is located between the golf course and SH 183. The commercial area could include a neighborhood retail center of approximately 12 acres. The retail center would likely be located adjacent to the north side of SH 183 at the Green Oaks Boulevard intersection. The remaining area would be devoted to typical suburban offices ranging from one to three stories. All facilities and residential units, except one single-

family residence listed on the NRHP, would be demolished. Development of the neighborhood retail center is expected to be complete by 1998. Office development could begin soon after disposal of the property and could be approximately 40 percent complete by the year 2013.

**Residential.** The proposed residential land use covers 308 acres or about 12 percent of the total base acreage and includes four separate parcels.

The Off-Site WSA would be developed for 50 single-family ranchettes. The storage igloos would be demolished, with development of the ranchettes projected to be complete by the year 2013.

Kings Branch area would be developed with up to 500 multi-family units. The preclosure housing units would either be sold and relocated off site, or demolished. Development of this new housing is projected to be complete by the year 2013.

The residential area in the southeast portion of the base contains one house that would be retained. In addition to this residence, up to 60 additional single-family residences could be constructed within 10 years after base disposal.

Another small parcel in the southeast portion of the base contains one single-family residence that would be converted to civilian residential use.

**Public Facilities/Recreation.** The proposed public facilities/recreation land uses include two areas consisting of 174 acres or 7 percent of the base area. The first area in the southeastern portion of the base includes the golf course, the child care center, and a floodplain of the Farmers Branch Creek. The golf course area could be reused soon after disposal of the property. The child care center could be reused as a city hall and public library; the floodplain would be retained as open space. A private cemetery would be retained; however, the single-family residences surrounded by the golf course area would be demolished.

The second area is a narrow parcel along the western boundary of the Kings Branch housing area, which includes a portion of the 100-year floodplain of the Farmers Branch Creek. This land would be retained as open space.

#### **1.4.4 Other Land Use Concepts**

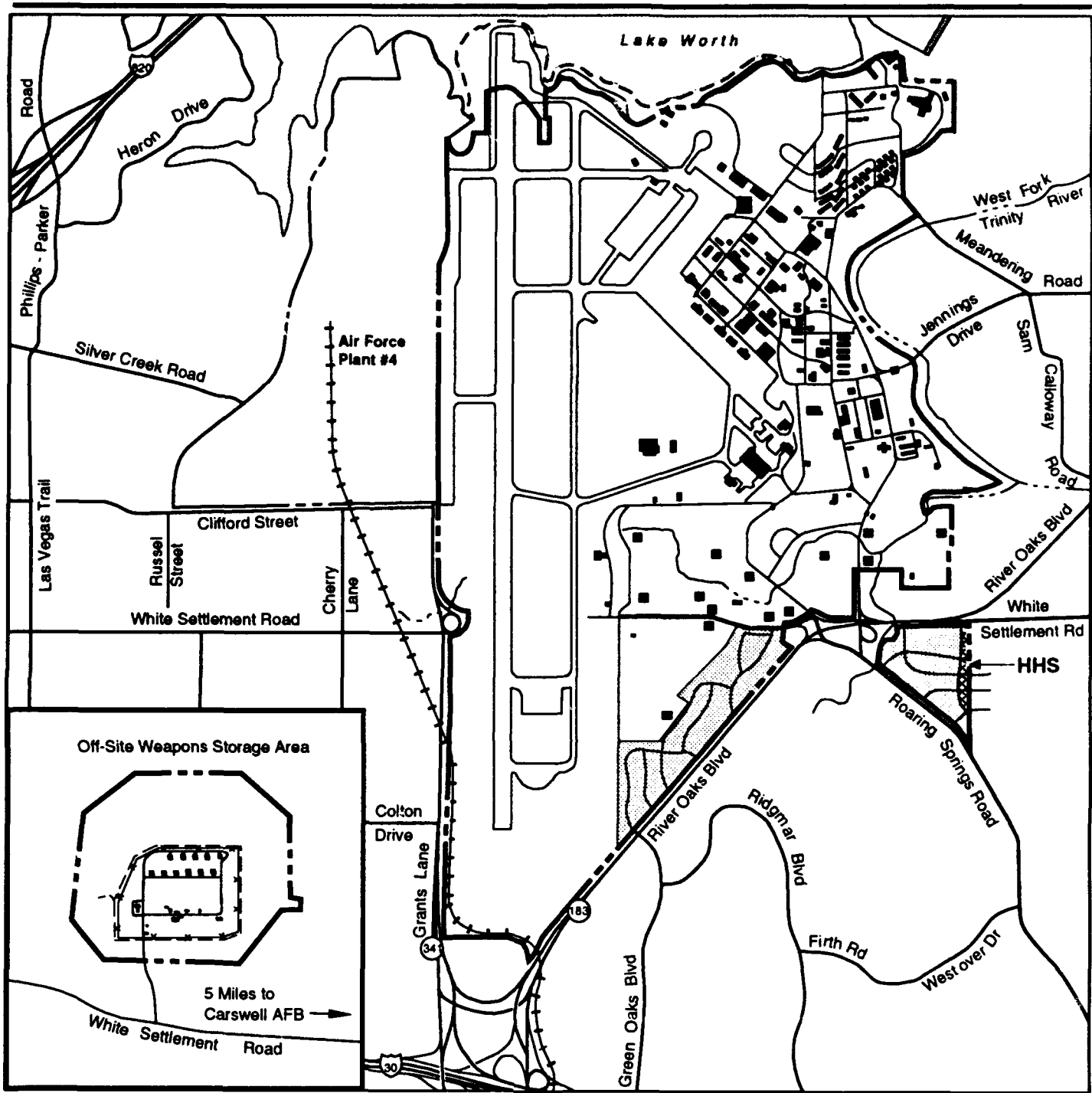
This section describes proposed federal property transfers and conveyances to nonfederal agencies and private parties. These independent land use concepts are for specific facilities or areas and are not part of any integrated reuse option. They are independent of one another and could be individually implemented or in combination with any of the reuse alternatives.



In compliance with the Federal Property and Administrative Services Action of 1949, the Air Force solicited proposals from other federal agencies regarding their interest in acquiring any lands or facilities identified for disposal at Carswell AFB. Several land use concepts were provided to the Air Force during the scoping process; however, two proposals requested facilities or property considered to be potentially excess to the needs of DOD. The others were considered not to be viable and were eliminated from further consideration.

**Health and Human Services.** Approximately 20 dwelling units along the east side of the Kings Branch parcel have been requested for renovation as handicapped housing. It is assumed that these units would support about 50 persons (Figure 1.4-4).

**Retained Residential Areas.** Approximately 550 Carswell AFB housing units located in Kings Branch, along SH 183 and scattered throughout the golf course, would be converted for civilian reuse. These units could provide single-family residences or specialized housing (low-moderate income, retirement, homeless assistance) for up to 1,375 persons. Provided that this concept is residential in nature, minimal direct jobs would be created.



# EXPLANATION



Health and Human Services (HHS)



Retained Residential Areas

----- Carswell AFB Boundary

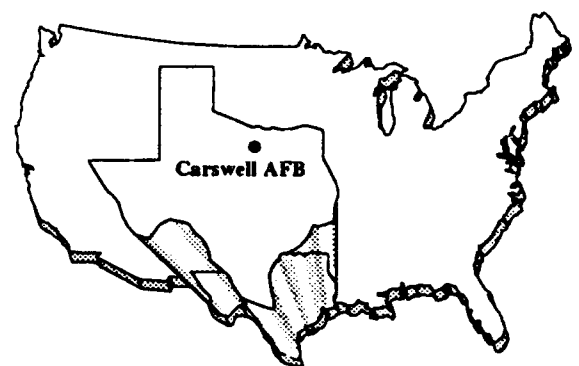
----- Leased Property

----- Air Force Plant #4 Boundary

## Other Land Use Concepts

Figure 1.4-4

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## **CHAPTER 2**

# **COMMUNITY SETTING AND REGION OF INFLUENCE**

## **2.0 COMMUNITY SETTING AND REGION OF INFLUENCE**

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This chapter describes the community setting in which Carswell AFB is located. In addition, the ROIs for the various issues, economic activity, population, housing, public services, public finance, transportation, and utilities are also identified.

### **2.1 COMMUNITY SETTING**

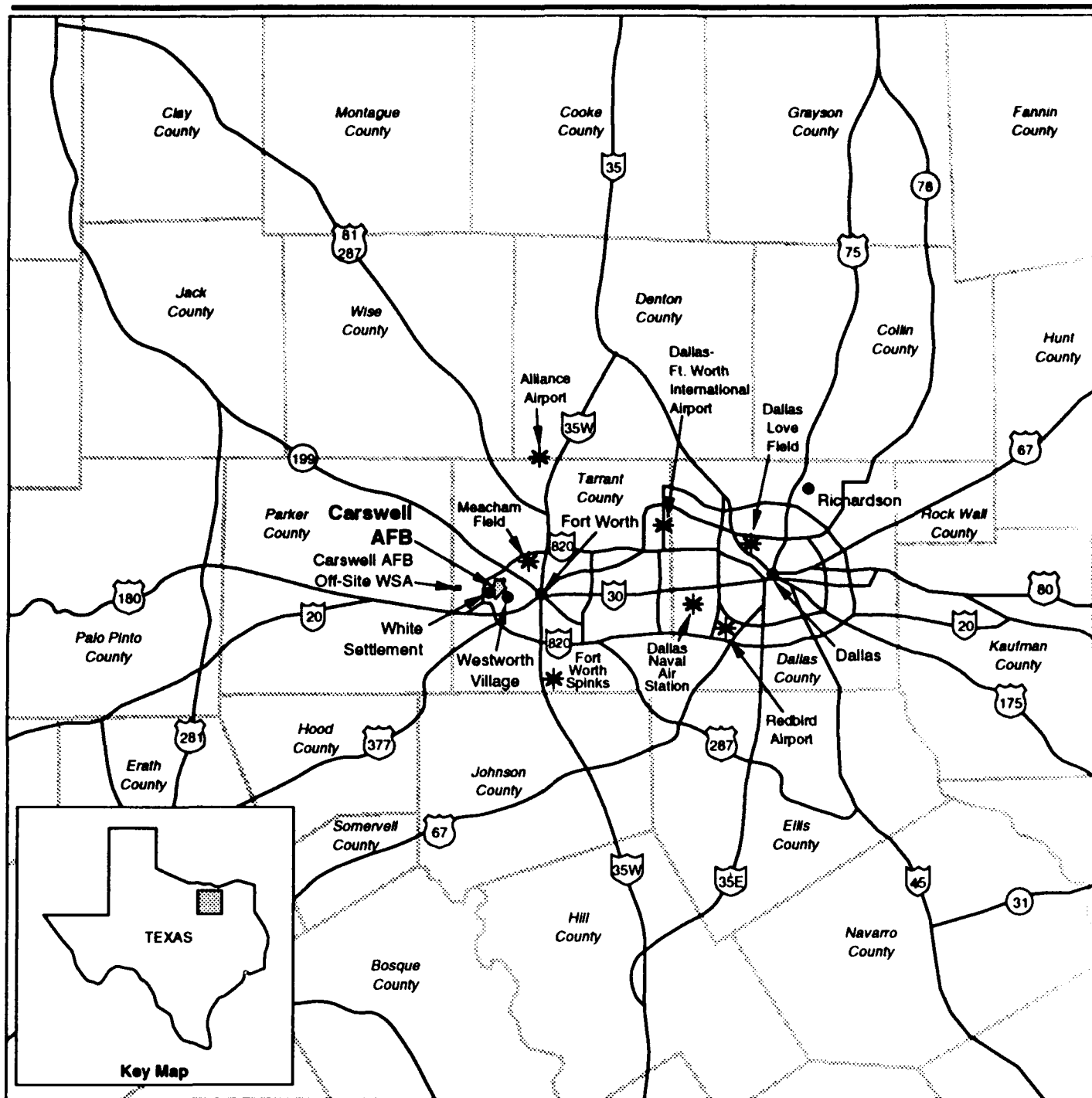
Carswell AFB is located in north-central Texas in Tarrant County approximately 60 miles west of Dallas and 8 miles west of downtown Fort Worth (Figure 2.1-1). The region is part of the Dallas/Fort Worth Consolidated Metropolitan Statistical Area (MSA), one of the largest markets in the United States, with a population of over 4 million. The region is the location of numerous corporate headquarters and many major manufacturing and distribution facilities. The base is bordered by Lake Worth to the north, the West Fork of the Trinity River and the community of Westworth Village to the east, the city of Fort Worth to the northeast and southeast, the city of White Settlement to the west and southwest, and AF Plant #4 to the west (Figure 2.1-2).

Commercial activities in the vicinity of Carswell AFB include AF Plant #4, just west of the base, and a regional shopping center (Ridgmar Mall), just southeast of the runway. In addition, industrial areas are located west of the base.

The initial mission of the base, established in 1942 as Tarrant Field Airdrome, was to provide transition training for the B-24 heavy bomber pilots and it has served as a heavy bomber base ever since. The Strategic Air Command (SAC) assumed control of the installation on March 21, 1946. Ten years later, Carswell became home base to its first B-52s and KC-135s. Carswell's host unit, the 7th Bomb Wing, was established in 1948. The Air Combat Command (ACC) assumed control of the base in 1992. Carswell AFB officially closed in September 1993.

The base property covers 2,555 acres; 2,264 acres comprise the main base, 44 acres comprise the residential parcel southeast of the base referred to as Kings Branch, and 247 acres comprise the Off-Site WSA (also referred to as Carswell's Ammunition Storage Annex or off-base WSA) located 5 miles from the main base.

The majority of the base area (58 percent) falls within the jurisdiction of the city of Fort Worth. An additional 25 percent of the base lies within the city



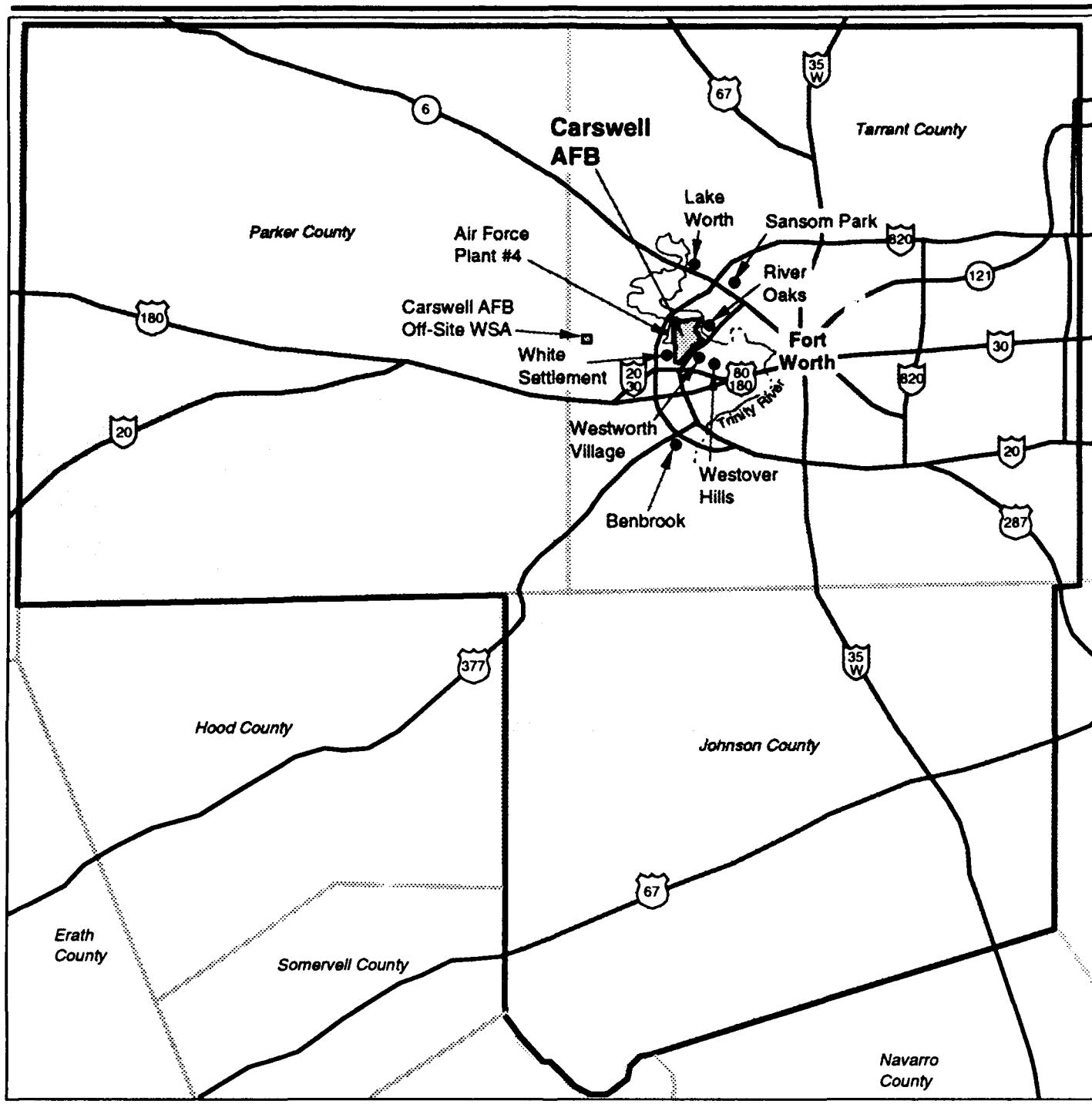
# EXPLANATION

- \* Major Airports
-  Interstate Highways
-  U.S. Highways
-  State Highways







## Regional Map

Figure 2.1-1



# EXPLANATION

-  Region of Influence
-  Interstate Highways
-  U.S. Highways
-  State Highways

## Region of Influence

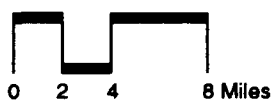


Figure 2.1-2

of Westworth Village, 9 percent in unincorporated Tarrant County, and the remaining 8 percent is located within the city of White Settlement.

### **Community Setting**

**Benbrook.** The city of Benbrook is approximately 2 miles south of Carswell AFB (see Figure 2.1-2). The population of the city has grown at an average annual rate of 4 percent per year from 1970 to 1990. Single-family housing has decreased its share of the housing market during the 1980s, while the number of multi-family and rental units has increased.

**Fort Worth.** The city of Fort Worth surrounds Carswell AFB on the north, east, and west sides (see Figure 2.1-2). The population of Fort Worth has grown at an average annual rate of 1 percent from 1970 to 1990. While the predominant housing is single family, the multi-family housing market in the city has increased between 1980 and 1990. New residential growth in the city has primarily occurred in the east and southwest areas of the city.

**Lake Worth.** The city of Lake Worth is approximately one-half mile north of Carswell AFB (see Figure 2.1-2). Lake Worth is a small, single-family, residential community that has maintained a stable population throughout the 1980s.

**River Oaks.** The city of River Oaks is less than one-half mile east of Carswell AFB (see Figure 2.1-2). The population of River Oaks has grown at an average annual rate of 3 percent from 1970 to 1990. The housing characteristics in River Oaks have remained stable from 1980 to 1990.

**Sansom Park.** The city of Sansom Park is less than one-half mile northeast of Carswell AFB (see Figure 2.1-2). Sansom Park is a small residential community characterized by single-family residential areas. New developments in the city have increased the share of multi-family residential units.

**Westover Hills.** The town of Westover Hills is less than one-half mile south of Carswell AFB (see Figure 2.1-2). The population of Westover Hills has remained constant from 1970 to 1990. The town is characterized by large, single-family residences.

**Westworth Village.** The city of Westworth Village is adjacent to the southeast side of Carswell AFB (see Figure 2.1-2). The population has decreased at an average annual rate of 3 percent from 1970 to 1990. Westworth Village is predominantly a single-family, residential community.

**White Settlement.** The city of White Settlement is adjacent to the southwest of Carswell AFB (see Figure 2.1-2). The population has grown at an average annual rate of 1 percent from 1970 to 1990. The housing



characteristics in the city have been changing during the period of 1970 to 1990. Multi-family housing and rental units have absorbed an increased share of the housing market.

## **2.2 REGION OF INFLUENCE**

The ROI is defined as the region in which the principal direct and secondary socioeconomic effects of disposal and reuse actions at Carswell AFB are likely to occur and are expected to be of most consequences for local jurisdictions. It is important to note that the ROI for each issue addressed may vary from one to another.

Two factors were important in determining the ROI used in this analysis. The first was the distribution of residences for 1992 military and civilian personnel stationed at Carswell AFB. This residential distribution is not only an aid in determining where the greatest effects of closure would occur, but also provides a guide to where the possible effects of reusing the base would occur since it reflects the revealed preferences of those employed at the site. Data for this residential distribution were obtained by school district and zip code information for all personnel employed at the base for which data were available.

The second factor in determining the extent of socioeconomic effects is the degree of linkage among economies of the various communities in the region. This linkage, based on trade among sectors within the region, determines the nature and magnitude of the multiplier effects of various actions at the base.

Based on these two factors, the ROI is comprised of three contiguous counties: Johnson, Parker, and Tarrant. More specifically, the majority of socioeconomic effects would be experienced in Tarrant County, in the western sections of the city of Fort Worth, and in the communities of Westworth Village and White Settlement.

### **Economic Resource Impact Statements**

Regional purchases associated with Carswell AFB, including base spending for goods and services and spending associated with base payrolls, are reported in Carswell AFB Economic Resource Impact Statements (ERISs) that are prepared on an annual basis. The regional expenditures cited in these statements are reported for an area within a 50-mile commuting radius around the base, which includes all or part of the following thirteen counties: Jack, Wise, Denton, Collin, Dallas, Tarrant, Parker, Palo Pinto, Erath, Hood, Somervell, Johnson, and Ellis. While the area within the 50-mile radius serves as a departure point in defining the ROI, it is often too wide an area for pinpointing where the socioeconomic effects will occur within the region. Consequently, this 50-mile radius was not used to define

the ROI. The more accurately defined ROI was developed utilizing zip code and school district information.

### **Economic Activity**

It is anticipated that almost all of the regional reuse demands associated with construction and operation payroll expenditures, and most of the demands associated with construction and operation goods and services expenditures, would occur within the Fort Worth MSA. This area is comprised of Johnson, Parker, and Tarrant counties. Most demands associated with regional economic effects of base alignment were anticipated to be concentrated within this ROI. Potential secondary effects that may occur outside the ROI were expected to be minimal after dispersion and are excluded from further analysis.

Total employment in the three-county ROI grew at an average annual rate of 3.6 percent, from 339,927 to 662,744, over the period 1970-1989. This rate of growth was slightly greater than that of the state of Texas, which sustained an annual rate of 3 percent over the same period. The national annual rate of change was 2.2 percent. The military's share in total ROI employment decreased from 3.6 percent in 1970 to 1.5 percent in 1989. In contrast, the military's share of total jobs in the United States decreased at a slower rate, from 3.6 percent in 1970 to 2 percent in 1989. In 1992, the larger employers in the region were General Dynamics, the Tandy Corporation, IBM, Delta Airlines, American Airlines, Alliance Airport, Bell Helicopter-Textron, General Motors, and the U.S. Department of the Treasury.

Tarrant County accounted for 92 percent of the employment increase in the ROI over the period of 1970-1989. The average annual rate of growth in employment in Tarrant County was 3.6 percent during this period.

Total employment in Tarrant County grew from 314,826 jobs in 1970 to 612,913 jobs in 1989; an increase of almost 95 percent. The military portion of the government sector in Tarrant County increased from 8,148 in 1970 to 9,371 in 1989, while its sector share decreased from 2.6 percent in 1970 to 1.5 percent in 1989. The proportion in the manufacturing sector also decreased in Tarrant County from 27.6 percent (86,964 jobs) in 1970 to 18.7 percent (114,855 jobs) in 1989, while the services sector increased from 18.7 percent (58,952 jobs) to 25.3 percent (155,323 jobs) during the same period.

The continued growth and development of the transportation sector and the airline industry, in particular, has promoted employment in multi-modal transportation services. American Airlines, the world's largest airline, and Burlington Northern, the nation's largest railway company, make the Fort

Worth area their headquarters. American Airlines has expanded its activities in the region by locating an aircraft maintenance center at Alliance Airport.

Tandy Computer, also headquartered in Fort Worth, has entered into a joint agreement with a Japanese electronics firm, Matsushita Corporation, to manufacture laptop and notebook-style computers. Defense spending levels in Texas peaked in 1986 at \$17.1 billion, but by 1990 had declined by \$1.3 billion to \$15.8 billion, representing a 7.5 percent decrease over the 4-year period. In 1990, Tarrant County reported over \$3.6 billion in defense spending, approximately 25 percent of the Texas allocation and the largest amount spent in any one region within the United States. The continued operation of AF Plant #4 (formerly General Dynamics) will help to retain defense-related contracts in the Fort Worth area. In 1990, over 77 percent (\$2.8 billion) of the defense spending reported in Tarrant County was spent on contracts for manufacturing aircraft and aircraft parts, which is the primary function of AF Plant #4.

### **Population**

The ROI for population is comprised of Johnson, Parker, and Tarrant counties. Specific emphasis is placed on Tarrant County (containing 88 percent of the ROI population in 1990) and the communities of Benbrook, Lake Worth, River Oaks, Sansom Park, Westover Hills, Fort Worth, White Settlement, and Westworth Village. Analysis of data describing the residential location of active duty and civilian personnel stationed at Carswell AFB aids in the delineation of the ROI and identification of the communities most likely to be affected by closure. A similar assessment of data showing the residential location of employees of AF Plant #4 adjacent to Carswell AFB gives an indication of the likely area within which effects of reuse would be concentrated. The pattern is very similar to that of Carswell AFB employees.

The population of the ROI increased from 795,974 persons in 1970 to 974,095 in 1980, at an average annual rate of 2 percent. The population reached 1,332,053 persons by 1990, having grown at an average annual rate of 3.2 percent from 1980 to 1990. The individual counties comprising the ROI show a pattern of consistent growth over the two decades. The population of Tarrant County increased from 715,587 in 1970 to 861,837 in 1980 (at an average annual rate of 1.9 percent) and to 1,170,103 by 1990 (at an average annual rate of 3.1 percent from 1980 to 1990).

The three communities expected to experience a significant portion of the effects of realignment and reuse are Fort Worth, Westworth Village, and White Settlement, all of which are located immediately adjacent to the base; Fort Worth is the largest of the three communities. Its population declined from 393,455 in 1970 to 385,164 in 1980 (at an average annual rate of 2 percent), but increased at an average annual rate of 1.5 percent between

1980 and 1990 to reach 447,491 persons. Westworth Village experienced a decline in population of 2.2 percent annually between 1970 and 1980 (from 4,578 persons in 1970 to 3,651 in 1980), and a decline of 4.3 percent per year between 1980 and 1990. White Settlement grew from 13,449 persons in 1970 to 13,508 in 1980 at an annual rate of 0.04 percent, and further grew to 15,472 persons in 1990 at an average annual rate of 1.4 percent from 1980 to 1990.

### **Housing**

Housing effects resulting from the closure and reuse of Carswell AFB were analyzed for the ROI, defined as Tarrant County and the selected communities of Fort Worth, Benbrook, Lake Worth, River Oaks, Sansom Park, Westover Hills, White Settlement, and Westworth Village. Because housing effects are expected to follow the distribution of population effects as described above, the ROI is the same for housing issues as it is for population issues. As with population, the housing stock in the ROI steadily grew at an average annual rate of 3.9 percent from 379,169 year-round units in 1980 to 554,225 units in 1990. All three counties comprising the ROI experienced similar growth rates: 4.2 percent per year for Johnson County, 4.3 percent for Parker County, and 3.8 percent for Tarrant County. Tarrant County contained approximately 89 percent of the regional housing stock in both 1980 and 1990 and was the location of the largest number of new units constructed.

The number of housing units in Tarrant County increased from 337,446 in 1980 to 491,152 in 1990. This addition of 153,706 units comprised 88 percent of the regional total over the period 1980-1990. Most of the units constructed in Tarrant County are concentrated in the city of Fort Worth, which contained 46 percent of the Tarrant County housing stock in 1980 and 40 percent in 1990. The city of Benbrook year-round housing units increased from 4,646 units in 1980 to 8,377 in 1990, at an average annual rate of 6.1 percent. The city of Fort Worth year-round housing units increased from 155,897 in 1980 to 194,429 in 1990, at an average annual rate of 2.2 percent. The city of Lake Worth year-round housing units increased from 1,624 in 1980 to 1,778 in 1990, at an average annual rate of 0.9 percent. The city of River Oaks year-round housing units increased from 2,849 in 1980 to 2,877 in 1990, at an average annual rate of 0.1 percent. The city of Sansom Park year-round housing units increased from 1,480 in 1980, to 1,482 in 1990, at an average annual rate of 0.01 percent. Westover Hills year-round housing units increased from 229 in 1980 to 267 in 1990, at an average annual rate of 1.6 percent. Westworth Village year-round housing units increased from 1,120 in 1980 to 1,133 in 1990, at an average annual rate of 0.1 percent. White Settlement year-round housing stock increased from 4,905 in 1980 to 6,167 in 1990, at an average annual growth rate of 2.3 percent.

## **Public Services**

The ROI for the public services analyses (i.e., police and fire protection, general government, public education, and health care) contains the principal jurisdictions that have the closest linkages to the Carswell AFB site: those that directly provided services to Carswell AFB military and civilian personnel or their dependents, those that had public service and facility arrangements with the base, and those most likely to be affected by potential reuse of the base.

Potentially affected jurisdictions include Tarrant County government (responsible for providing services to unincorporated areas) and the cities of Fort Worth, Westover Hills, Westworth Village, White Settlement, and River Oaks. School districts that may be affected by closure and reuse of the base include Castleberry Independent School District (ISD), Fort Worth ISD, Lake Worth ISD, and White Settlement ISD, each of which contain kindergarten through twelfth grade levels. Together, these districts contained over two-thirds of the military and civilian personnel at Carswell AFB who resided off base.

Average annual enrollments increased in three of the four school districts from fall 1988 to fall 1990. The increases were: Castleberry ISD, 2.1 percent; Fort Worth ISD, 2.1 percent; and White Settlement ISD, 3.5 percent. Average annual enrollments for the Lake Worth ISD decreased by 1.7 percent over the same period.

The number of Carswell AFB military dependents enrolled in the Castleberry ISD decreased by ten students (33 percent) from 1990 to 1991. In the Fort Worth ISD, military dependent enrollments increased by 19 students (2.7 percent) over the same time period. In the Lake Worth and White Settlement ISDs, military enrollments decreased by 10 students (31 percent) and 114 students (32.7 percent), respectively.

In the Fort Worth metropolitan area, higher education is provided by Texas Christian University (TCU), the University of Texas at Arlington (UTA), Texas Wesleyan University (TWU), and the Tarrant County Junior College System.

## **Public Finance**

The ROI for public finance consists of the local governmental units that are expected to receive the majority of effects from base closure and/or potential reuse. These jurisdictions include Tarrant County, the communities of Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westover Hills, Westworth Village, and White Settlement, and the Castleberry ISD, Fort Worth ISD, Lake Worth ISD, and White Settlement ISD.

These local government units provided services to Carswell AFB area residents using funds principally raised through taxes, charges to community residents and local organizations for services, and federal and state transfers.

Castleberry ISD, Fort Worth ISD, Lake Worth ISD, and White Settlement ISD provided elementary and secondary education for two-thirds of the dependents of personnel at Carswell AFB. The districts received funding from federal, state, and local sources. Federal financing is from the Federal Impact Assistance Program (P.L. 81-874) for community schools serving military bases. The P.L. 81-874 program is for dependents of active duty and civilians employed at the base. State funding is tied to enrollment and attendance levels.

### **Transportation**

The ROI for the ground transportation analysis includes the cities of Fort Worth, Westworth Village, and White Settlement with an emphasis on the immediate area surrounding Carswell AFB. Within this geographic area, the analysis examines the principal road, air, and rail transportation networks, including the segments of the transportation networks in the region that serve as direct or key indirect linkages to the base and those that were commonly used by military and civilian personnel at Carswell AFB.

Carswell AFB is located in the northwest portion of Tarrant County, which is traversed by Interstates 30, 35W, and 820. The main access to the base is from SH 183, otherwise known as River Oaks Boulevard. SH 183 links Interstate 30, south of the base, to Jacksboro Highway (SH 199) and Interstate 820, north-northeast of the base. Jennings Drive and Meandering Road also provide access to the base. Other major roads servicing the area include White Settlement Road, Roaring Springs Road, and Spur 341 (see Figure 3.7-1).

No major rail service is available to the base. A Union Pacific freight line services AF Plant #4, adjacent to the western boundary of the base. This line connects to the main line 4 miles south of the base. No commuter or light rail systems exist or are proposed within the ROI.

Numerous airports are located in a nine-county area surrounding Carswell AFB. Major airports include Alliance, Meacham, Dallas Love Field (DAL), and Dallas/Fort Worth International Airport (DFW). Therefore, the ROI varies within the nine-county area for each type of aviation service.

Substantial, planned improvements to DFW would have an influence on the potential commercial (air carrier) market. DAL is in competition with DFW to garner short flights intrastate and business jet travelers with a minor role in most markets. Another aspect of the region is the many general aviation

markets. Meacham Field handles many general aviation operations (close to 500,000 in 1991). The growth of general aviation is constrained by the abundance of general aviation airports in many of the counties.

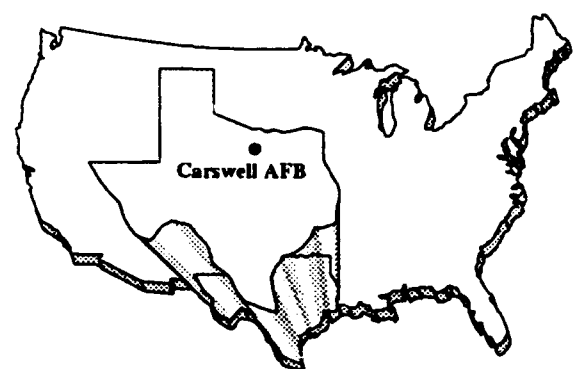
For air carrier passenger service and non-hub cargo activities, a shared market exists between the major airports (DFW, DAL, Meacham, and Alliance). The income derived from scheduled passenger service from these airports is a major financial contributor to the ROI. DFW and DAL enplaned more than 27 million passengers in 1990, and the Federal Aviation Administration (FAA) forecasts aggressive passenger service growth at these airports throughout the next 20 years. Alliance Airport is expanding in many markets providing air cargo and aircraft maintenance service. The air transportation system would not be affected since none of the major airports will be affected by the base closure.

#### **Utilities**

The ROI for the utilities analysis (including water supply and distribution, wastewater collection and treatment, solid waste collection and disposal, and energy supply and distribution) generally consists of the service areas of the local purveyors that serve Carswell AFB and the surrounding affected cities of Fort Worth, White Settlement, and Westworth Village. Water, wastewater treatment, and solid waste disposal are primarily provided by the city of Fort Worth. Residential and base electricity are supplied to the region by Texas Utilities (TU) Electric. Lone Star Gas Company is the natural gas purveyor in the region.

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## **CHAPTER 3**

# **SOCIOECONOMIC CONDITIONS**

## 3.0 SOCIOECONOMIC CONDITIONS

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### 3.1 INTRODUCTION

This chapter presents socioeconomic trends in the region (preclosure conditions), and outlines the effects of base closure (closure conditions) for comparison with projected effects of each potential reuse.

Of particular importance in this analysis are the site-related and migratory effects. Site-related effects are defined as the total activities associated with the base area. These would include both direct and secondary employment and the resultant changes on population. Migratory effects are defined to be the persons who would leave the ROI because of closure-related reductions in employment and the corresponding changes or effects on population, housing, public services, public finance, transportation, and utilities.

The migratory effects are a component of the site-related effects. For example, the site-related employment effects would show the total job losses due to closure of the base. Some of these newly unemployed people would leave the region to seek employment elsewhere, thus resulting in migratory effects. The difference between the site-related effects and the migratory effects is the portion of people who would lose their jobs due to closure and would remain in the ROI, adding to the available labor pool. Persons unrelated to the site-related activities who would leave the ROI due to closure are not included in the analysis.

A summary of conditions at closure of Carswell AFB is provided in Table 3.1-1. The methods, data, and technical approach used in analyzing regional socioeconomic conditions due to base closure are discussed in Appendix B.

### 3.2 ECONOMIC ACTIVITY

#### Recent Trends

**Jobs.** Total employment in the ROI, which is comprised of Johnson, Parker, and Tarrant counties, grew at an average annual rate of 3.6 percent between 1970 and 1989. During this time, employment increased from 339,927 jobs to 662,744 jobs (Table 3.2-1). This change was the result of increasing civilian employment (an average annual growth rate of 3.7 percent) and diminishing military employment (an average annual decrease of 1.0 percent).

Annual job growth averaged 2.2 percent over the same time period in the United States. At the national level, civilian employment increased at an

**Table 3.1-1. Effects of Closure at Carswell AFB**  
**Page 1 of 2**

<b>Resource Category</b>	<b>1991 through Closure<sup>(a)</sup></b>
<b>Economic Activity</b>	
Employment	Decrease of 6,492 direct and 3,451 secondary jobs in the ROI.
Earnings (1989\$)	Decrease of approximately \$153.0 million/year in the ROI.
<b>Population</b>	
Military-related	Decline of 15,636 people in the ROI.
<b>Housing</b>	3,939 off-base housing units vacated in the ROI.
<b>Public Services</b>	
General Government, Police and Fire	
Tarrant County <sup>(b)</sup>	Decline in population served of 13,297.
Fort Worth <sup>(b)</sup>	Decline in population served of 8,910.
River Oaks	Decline in population served of 312.
Westover Hills	Decline in population served of 13.
Westworth Village <sup>(b)</sup>	Decline in population served of 825.
White Settlement <sup>(b)</sup>	Decline in population served of 586.
Remainder of County	Decline in population served of 1,865.
Education	
Castleberry ISD	Decline in enrollment of 30 students.
Fort Worth ISD	Decline in enrollment of 712 students.
Lake Worth ISD	Decline in enrollment of 32 students.
White Settlement ISD	Decline in enrollment of 349 students.
Health Care	Loss of military hospital service at Carswell AFB, affecting eligible non-active duty military personnel in the ROI.
<b>Public Finance (1989\$)</b>	
Tarrant County	Shortfalls of \$613,680 per year.
Benbrook	Shortfalls of \$40,392 per year.
Fort Worth	Shortfalls of \$857,472 per year.
Lake Worth	Shortfalls of \$1,350 per year.
River Oaks	Shortfalls of \$4,880 per year.
Sansom Park	Shortfalls of \$3,942 per year.
Westover Hills	Shortfalls of \$2,496 per year.

Notes: Shortfall is the difference between projected local government expenditures and revenues when the projected expenditures are greater than the projected revenues.

(a) Closure occurred September 30, 1993.

(b) On-base population has been excluded.

AFB = Air Force Base.

ISD = Independent School District.

ROI = Region of Influence.

**Table 3.1-1. Effects of Closure of Carswell AFB**  
**Page 2 of 2**

<b>Resource Category</b>	<b>1991 through Closure<sup>(a)</sup></b>
<b>Public Finance (1989\$)</b>	
Westworth Village	Shortfalls of \$22,516 per year.
White Settlement	Shortfalls of \$1,778 per year.
Castleberry ISD	Shortfalls of \$107,359 per year.
Fort Worth ISD	Shortfalls of \$1,947,500 per year.
Lake Worth ISD	Shortfalls of \$196,238 per year.
White Settlement ISD	Shortfalls of \$576,334 per year.
<b>Transportation</b>	Base-related traffic reductions would improve traffic flow on local roads. No effects are expected for air and rail transportation modes.
<b>Utilities</b>	Demands for water, wastewater treatment, solid waste disposal, electricity and natural gas would decline by less than 1 percent in the ROI.

**Notes:** Shortfall is the difference between projected local government expenditures and revenues when the projected expenditures are greater than the projected revenues.  
 (a) Closure occurred September 30, 1993.  
 ISD = Independent School District.  
 ROI = Region of Influence.

average annual rate of 2.3 percent, while military employment decreased an average of 0.8 percent per year. Average annual job growth in Texas during this period was 3 percent.

**Military Sector.** There were 9,983 military jobs in the ROI in 1989 (see Table 3.2-1). The contribution of Carswell AFB to the military employment sector remained virtually constant at 69 percent from 1987 to 1989. Over this same period, the number of civilian jobs associated with Carswell AFB increased from 1,967 to 2,002 (Table 3.2-2). The 8,874 direct military and civilian jobs in 1989 created an additional 4,771 secondary jobs in the region through the expenditure of wages, salaries, and procurement of materials and supplies. The percentage of total jobs in the military sector in the ROI has historically been about equal to or slightly below that for the nation, although the military sectors for both the ROI and the nation have decreased between 1970 and 1989 and increased slightly between 1980 and 1989. In 1989, there were 9,983 (or 1.5 percent) military jobs in the ROI. By comparison, military jobs comprised 3.6 percent of all ROI jobs in 1970. Two factors have contributed to the decrease in the region's share of military employment: (1) the number of military jobs decreased from 12,197 in 1970 to 9,983 in 1989, while (2) over the same period there was a substantial increase in nonmilitary jobs (private jobs and civilian jobs

**Table 3.2-1. Summary of Economic Indicators, ROI, Counties, State of Texas, and the Nation**  
**Page 1 of 2**

	1970	1980	1989	Average Annual % Change 1970-1989
<b>Three-County ROI</b>				
Total Jobs	339,927	496,954	662,744	3.6
Civilian	327,730	489,178	652,761	3.7
Military	12,197	7,776	9,983	-1.0
Military, % of total	3.6	1.6	1.5	NA
Civilian Labor Force	334,395	489,928	724,257	4.2
Unemployment Rate (%)	3.0	3.0	5.5	NA
Earnings per Job (1989\$)	23,071	23,115	23,069	0.0
Per Capita Income (1989\$)	12,576	16,099	17,259	1.7
<b>Tarrant County, Texas</b>				
Total Jobs	314,826	459,880	612,913	3.6
Civilian	306,678	452,463	603,542	3.6
Military	8,148	7,417	9,371	0.7
Military, % of total	2.6	1.6	1.5	NA
Civilian Labor Force	303,820	438,569	641,999	4.0
Unemployment Rate (%)	3.6	3.3	5.6	NA
Earnings per Job (1989\$)	23,477	23,605	23,558	0.02
Per Capita Income (1989\$)	12,764	16,371	17,686	1.7
<b>Parker County, Texas</b>				
Total Jobs	11,411	12,833	18,690	2.6
Civilian	7,586	12,690	18,444	4.8
Military	3,825	143	246	-13.4
Military, % of total	33.5	1.1	1.3	NA
Civilian Labor Force	12,457	19,928	31,920	5.1
Unemployment Rate (%)	1.9	3.3	4.4	NA
Earnings per Job (1989\$)	18,689	15,663	15,880	-0.9
Per Capita Income (1989\$)	10,927	13,682	14,553	1.5
<b>Johnson County, Texas</b>				
Total Jobs	13,690	24,241	31,141	4.4
Civilian	13,466	24,025	30,775	4.4
Military	224	216	366	2.6
Military, % of total	1.6	0.9	1.2	NA
Civilian Labor Force	18,118	31,431	50,338	5.5
Unemployment Rate (%)	3.1	3.1	4.9	NA
Earnings per Job (1989\$)	17,398	17,745	17,193	-0.1
Per Capita Income (1989\$)	10,856	14,237	14,215	1.4

NA = Not applicable.

ROI = Region of Influence.

**Table 3.2-1. Summary of Economic Indicators, ROI, Counties, State of Texas, and the Nation**  
**Page 2 of 2**

	1970	1980	1989	Average Annual % Change 1970-1989
<b>State of Texas</b>				
Total Jobs	4,951,774	7,330,012	8,705,898	3.0
Civilian	4,721,305	7,144,047	8,513,233	3.2
Military	230,469	185,965	192,665	-0.9
Military, % of total	4.7	2.5	2.2	NA
Civilian Labor Force	4,297,786	6,574,676	8,427,000	3.6
Unemployment Rate (%)	3.6	4.0	6.7	NA
Earnings per Job (1989\$)	21,518	22,996	22,681	0.3
Per Capita Income (1989\$)	11,598	14,745	15,512	1.5
<b>United States</b>				
Total Jobs	89,752,500	112,256,700	136,074,700	2.2
Civilian	86,520,500	109,805,700	133,306,700	2.3
Military	3,232,000	2,451,000	2,768,000	-0.8
Military, % of total	3.6	2.2	2.0	NA
Civilian Labor Force	82,771,000	106,940,000	123,869,000	2.1
Unemployment Rate (%)	4.9	7.1	5.3	NA
Earnings per Job (1989\$)	23,421	22,590	23,348	-0.02
Per Capita Income (1989\$)	12,946	14,926	17,592	1.6

NA = Not applicable.

ROI = Region of Influence.

Sources: Bureau of Labor Statistics, 1991c; U.S. Bureau of the Census, 1973, 1984b; U.S. Bureau of Economic Analysis, 1992.

**Table 3.2-2. Carswell AFB Employment**

Employment Category	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
Total personnel	8,913	9,308	8,874	8,674	8,654
Military personnel	6,946	7,117	6,872	6,721	6,726
Civilian personnel	1,967	2,191	2,002	1,953	1,928
Appropriated fund	1,044	1,236	974	952	923
Nonappropriated fund	593	591	636	593	647
Contract civilian	203	231	340	358	332
Private business on base	127	133	52	50	26

Note: Employment data include all personnel associated with the 301st FW and excludes ROTC cadets.

Personnel may or may not reside within the ROI.

FW = Fighter Wing.

FY = Fiscal year.

ROI = Region of Influence.

ROTC = Reserve Officer Training Corps.

Sources: U.S. Air Force, 1987, 1988, 1989b, 1990, 1991.

in federal, state, and local government) from 327,730 in 1970 to 652,761 in 1989. The consistent decline of 1 percent per year in the number of military jobs in the ROI during the past two decades mirrored the national trend, where military jobs have decreased an average of 0.8 percent during the same period.

**Jobs by Major Sector.** The major employment sectors within the three-county ROI are services, retail trade, manufacturing, and government-civilian. Services provided 167,011 ROI jobs in 1989, or 25.2 percent of the ROI total; retail trade provided 124,596 ROI jobs, or 18.8 percent; manufacturing provided 121,282 ROI jobs, or 18.3 percent. There were 70,251 government-civilian jobs within the ROI, or 10.6 percent of the total ROI jobs (Figure 3.2-1).

The 3.6 percent growth in employment reported for the three-county ROI from 1970 to 1989 was greater than that of the state of Texas where employment increased 76 percent, at an average annual rate of 3.0 percent.

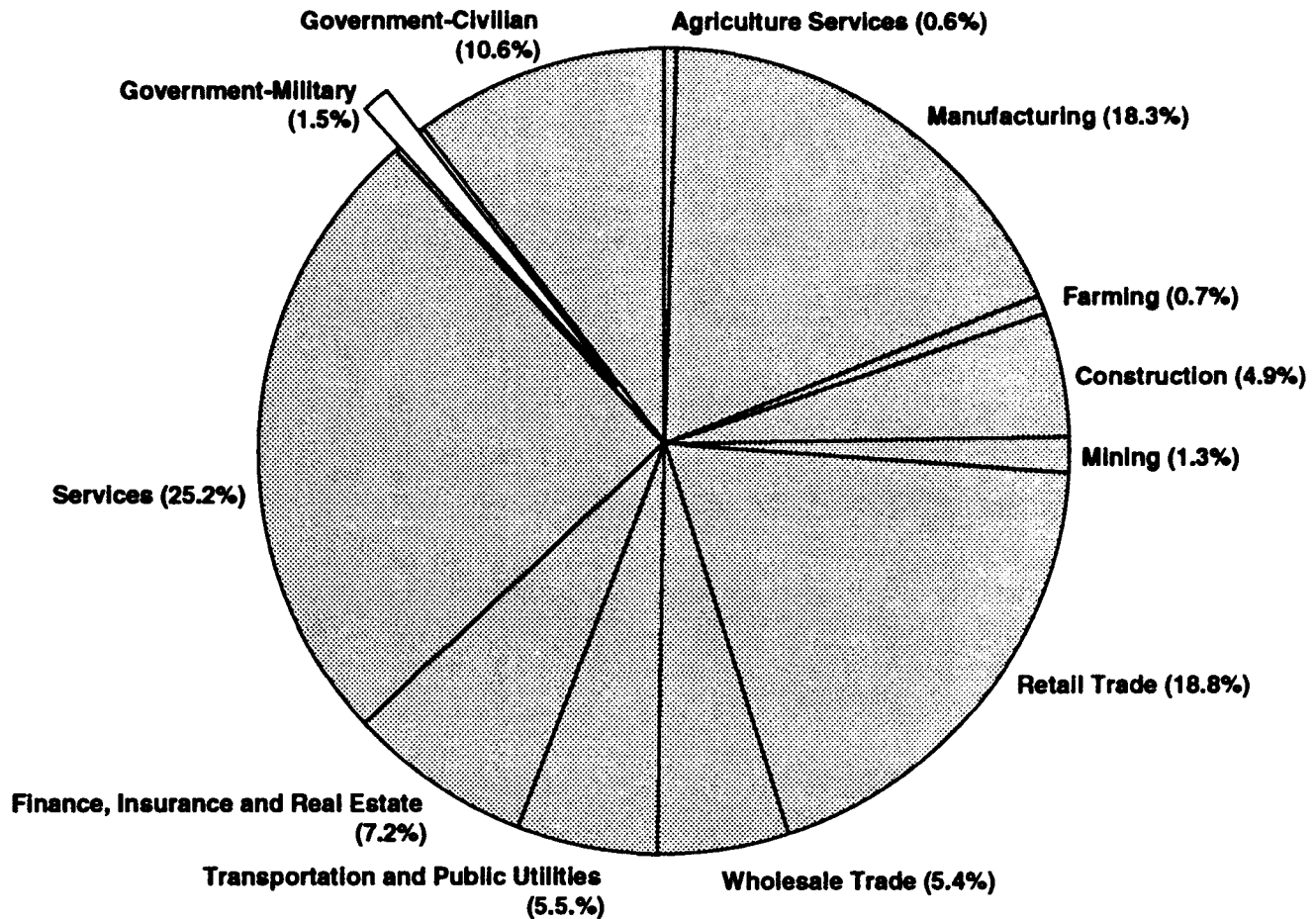
The unemployment rate in the ROI increased from 3 percent in 1970 to 5.5 percent in 1989. The increase was primarily the result of growth in the civilian labor force (persons available for work) outpacing growth in the number of available jobs. The state of Texas showed a similar growth pattern in which unemployment rose between 1970 and 1989, from 3.6 to 6.7 percent. The United States had an increase in unemployment levels from 4.9 percent to 7.1 percent during the period 1970 to 1980, and then a decrease between 1980 and 1989 to 5.3 percent (see Table 3.2-1).

**Earnings, Income, and Expenditures.** All earnings discussed in this section have been converted to 1989 base year dollars. Earnings per job in the ROI minimally fluctuated between 1970 and 1989. Per capita income, however, increased by \$4,683, at an average annual rate of 1.7 percent. Similar to national trends, per capita income outpaced earnings per job, due in part to the increased number of persons holding more than one job, while the average earning for each job remained relatively unchanged. Johnson, Parker, and Tarrant counties all had similar per capita income growth rates (1.4, 1.5, and 1.7 percent, respectively), while their earnings per job growth rates varied (0.1, -0.9, and 0.02 percent, respectively) (see Table 3.2-1).

Total earnings in the ROI grew from \$7.8 billion in 1970 to \$15.3 billion in 1989, at an average annual rate of 3.6 percent. Earnings in the military component of the government sector of the ROI decreased from nearly 2.6 percent to 1 percent over the same period. The relative share of earnings contributed by industry sectors remained relatively constant for the farming, construction, mining, and retail trade sectors; decreased by approximately 8 percent for the manufacturing industries; and increased by approximately 8 percent for the services sector. The remaining sectors fluctuated over the period, but failed to exhibit a noteworthy trend. These

## Major Industrial Sectors, 1989

Total Employment = 662,744



Source: U.S. Bureau of Economic Analysis, 1989a, b, d.

**Distribution of ROI  
Jobs by Major  
Industrial Sectors,  
1989**

**Figure 3.2-1**



results were similar to the national trends in which manufacturing, as a whole, experienced a loss in sector share while the services sector grew strongly over the same period.

From fiscal year (FY) 1987 to 1991, Carswell AFB payrolls followed the trend of personnel levels, decreasing from \$174.1 million in 1987 to \$163.2 million in 1991 (Table 3.2-3). The annual Carswell AFB expenditures increased from FY 1987 through FY 1989, peaking at \$98.9 million in FY 1989, then declined to \$64.3 million in FY 1991 (Table 3.2-4).

**Table 3.2-3. Carswell AFB Payrolls, FY 1987 to FY 1991 (1989\$)**

	1987	1988	1989	1990	1991
Military	136,098,401	133,000,143	135,237,201	131,077,725	136,280,952
Civilian	38,008,227	38,826,171	31,910,705	34,572,856	26,899,193
Appropriated fund	30,318,971	29,931,085	26,519,805	28,765,659	20,498,291
Nonappropriated fund	5,561,936	7,056,347	4,317,666	4,296,568	5,854,171
Other contract	2,127,320	1,838,739	1,073,234	1,510,629	546,731
Total	174,106,628	171,826,314	167,147,906	165,650,581	163,180,145

FY = Fiscal year.

Sources: U.S. Air Force, 1987, 1988, 1989b, 1990, 1991.

**Table 3.2-4. Carswell AFB Annual Expenditures, FY 1987 to FY 1991 (1989\$)**

	1987	1988	1989	1990	1991
Total construction	21,594,843	17,469,745	8,558,765	9,322,036	5,800,942
Total services	9,015,058	14,076,044	15,580,418	19,295,481	19,160,245
Commissary/base exchange	328,816	14,736,791	40,109,471	10,304,150	1,292,088
Education	495,223	958,211	1,259,904	1,033,921	742,038
Health	15,415,069	4,209,166	4,052,100	7,500,062	6,508,485
Temporary duty	2,913,903	3,204,230	3,759,609	602,339	0
Other	3,491,948	25,437,248	25,627,503	25,549,830	30,807,821
Total	53,254,860	80,091,435	98,947,770	73,607,819	64,311,618

FY = Fiscal year.

Sources: U.S. Air Force, 1987, 1988, 1989b, 1990, 1991.

Carswell AFB also indirectly contributed to the regional economy. As shown in Table 3.2-5, in FY 1991 the base contributed \$79,717,000 to the ROI through secondary employment.

**Table 3.2-5. Site-Related Employment and Earnings, 1991 to Closure (1989\$)**

	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
<b>Base Operations</b>				
Employment	11,440	7,763	4,540	1,497
Direct <sup>(d)</sup>	7,166	4,904	2,847	674 <sup>(c)</sup>
Secondary	4,274	2,859	1,693	823
Earnings (millions \$)	190,991	126,987	89,234	37,993
Direct (millions \$)	111,274	76,027	54,786	21,827
Secondary (millions \$)	79,717	50,960	34,448	16,166
<b>ROI Employment Estimates and Projections without Closure</b>	686,763	704,808	722,854	740,899
Employment Loss (Cumulative)	0	-3,677	-6,900	-9,943
<b>ROI Adjusted Employment with Closure</b>	686,763	701,131	715,954	730,956

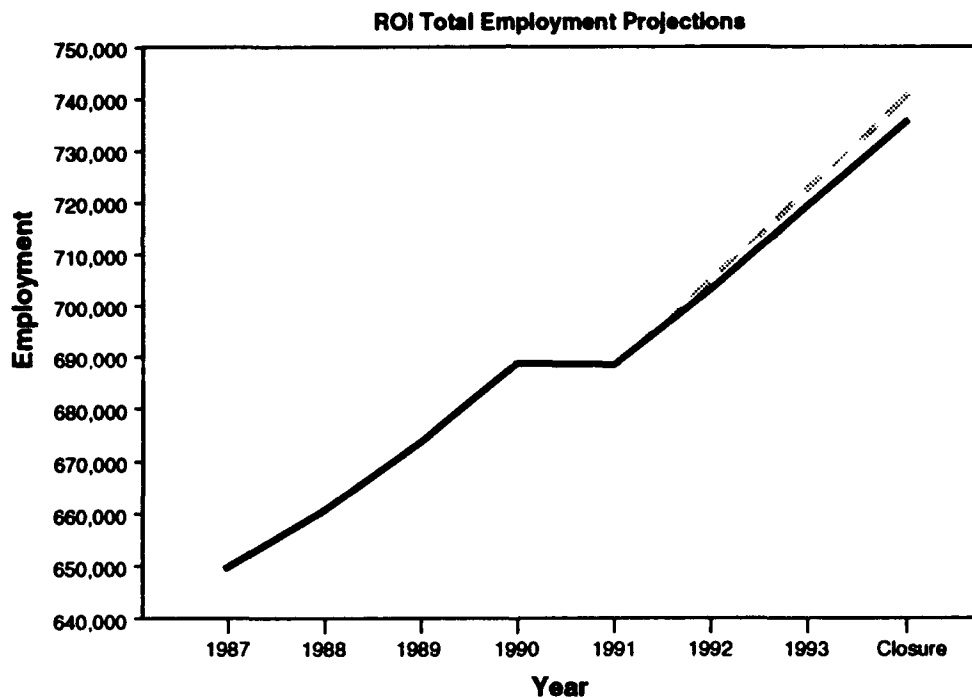
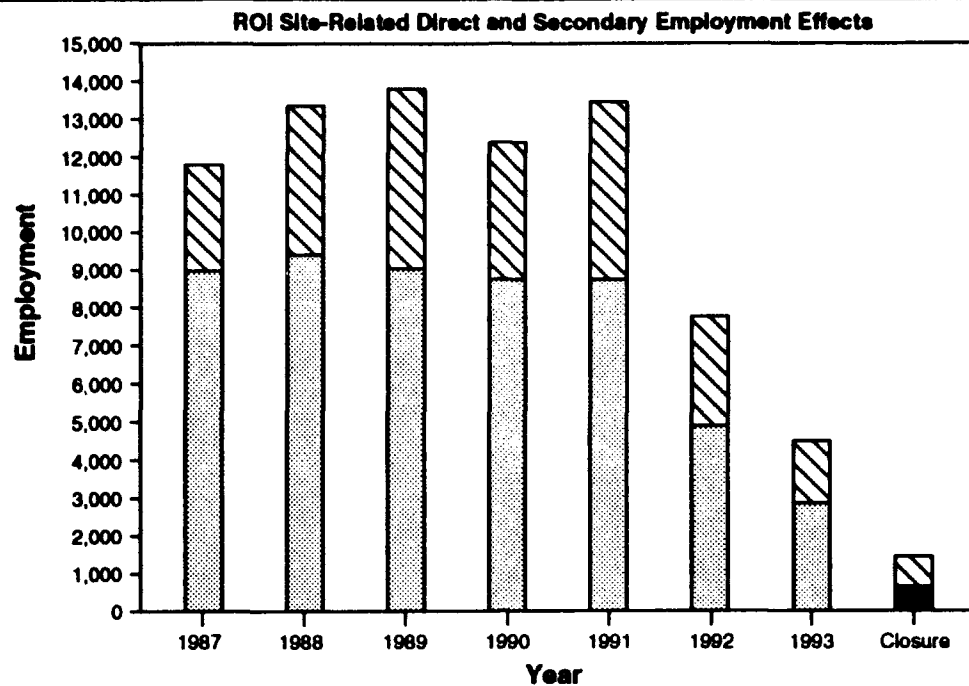
Notes: (a) The year 1993 represents the period from January 1, 1993, to September 30, 1993 (date of base closure).  
(b) Closure conditions as of October 1, 1993, .  
(c) This number includes the 50 operating location personnel, 594 AFRES 301st FW full-time personnel, and 30 WHCA personnel.  
(d) The 1,488 301st FW reservists are not included in Direct Employment totals; however, their contributions to earnings and secondary employment are included in this table.  
AFRES = Air Force Reserve.  
FW = Fighter Wing.  
ROI = Region of Influence.  
WHCA = White House Communications Agency.

Sources: U.S. Air Force, 1991, 1992c.






### Closure Conditions

The analysis of closure conditions for the SIAS for Carswell AFB was conducted in 1992, prior to closure of the base. The closure conditions were projections based upon data obtained from the Air Force and local jurisdictions as to the preclosure and expected conditions due to closure of the base.

The closure of Carswell AFB was projected to result in a net loss of 6,492 direct employment positions and 3,451 secondary jobs in the ROI (Figure 3.2-2). The loss of these positions and associated base spending (direct and



#### EXPLANATION

-  Caretaker and Retained Military Operations
-  ROI Site-Related Direct Employment
-  ROI Site-Related Secondary Employment
-  Actual & Closure Projection
-  Assumes No Base Closure \*

#### ROI Site-Related and Total Employment Projections

\* Drawdown due to base closure began in 1991.

**Figure 3.2-2**

secondary) reduced the contribution to the region through earnings by approximately \$148,150,000 in payrolls when compared to FY 1991 levels.

The closure of Carswell AFB was projected to result in an out-migration of 5,238 active duty military personnel (81 percent of the total direct jobs lost), including 5,088 personnel from the ROI. These personnel who out-migrated from the ROI accounted for \$125,465,000 in earnings in the regional economy.

The AFRES 301st FW remains in the retained base property. By closure, the 315 positions existing before closure were supplemented by an additional 279 jobs in order to give the 301st FW a stand-alone capability. In addition, 30 WHCA personnel remained on site in their preclosure locations. Secondary employment associated with these retained activities totaled 765 jobs at the time of base closure.

At closure, the remainder of the base was put into caretaker status and a staff of 50 operating location (OL) personnel administered the security and maintenance activities for the base area until disposal. These jobs were filled by available workers residing in the ROI.

Secondary employment supported by OL activities totaled 58 jobs. Direct annual earnings associated with the on-site OL were estimated to be \$1,103,000, and those of the secondary jobs to be \$1,354,300.

The total 674 direct jobs associated with the base at closure contributed \$21,827,000 in salaries to the local economy and, when combined with the spending on materials and supplies, generated an additional 823 secondary jobs and an additional \$16,166,000 in earnings in the ROI.

### **3.3 POPULATION**

#### Recent Trends

The population of the ROI increased from 795,974 in 1970 to 1,332,053 in 1990. About 85 percent of the increase occurred in Tarrant County (454,516 persons). The average annual rate of growth in the ROI over succeeding 10-year periods ranged from 2 percent in the 1970s to 3.2 percent in the 1980s. Although the populations of Johnson and Parker counties are considerably lower than that of Tarrant County, they also substantially grew at rates as high as 4 percent per year in Johnson County in the 1970s and 3.8 percent per year in Parker County in the 1980s (Table 3.3-1).

Over the period FY 1987 through FY 1991, the number of military personnel associated with Carswell AFB has fluctuated between a high of 7,117 and a low of 6,721 persons, while the number of dependents of these personnel

Table 3.3-1. Population Trends for ROI, Counties, and Communities, 1970-1990

Area	Population		Average Annual Growth Rate (percent)	
	1970	1980	1970-1980	1980-1990
Johnson County	45,769	67,649	4.0	3.7
Parker County	33,888	44,609	2.8	3.8
Tarrant County	715,587	861,837	1.9	3.1
Benbrook	8,167	13,579	5.2	3.7
Fort Worth	393,455	385,164	-0.2	1.5
Lake Worth	4,958	4,394	-1.2	0.4
River Oaks	3,807	6,890	6.1	-0.5
Sansom Park	4,771	3,921	-1.9	0.0
Westover Hills	N/A	671	N/A	0.0
Westworth Village	4,578	3,651	-2.2	-4.3
White Settlement	13,449	13,508	0.0	1.4
Region of Influence	795,974	974,095	2.0	3.2

N/A = Not available.

ROI = Region of Influence.

Sources: U.S. Bureau of the Census, 1970, 1973, 1980, 1990a.

has varied between 13,494 and 8,429. The number of military retirees in the ROI has varied between 28,042 persons in 1988 and 29,926 persons in 1991. Military personnel and their dependents represent, on average, 1.5 percent of the total three-county ROI population (Table 3.3-2).

**Table 3.3-2. Military Population and Housing, Carswell AFB**

Category	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
<b>Military Personnel</b>	6,946	7,117	6,872	6,721	6,726
Living on base (active duty)	1,315	1,324	1,186	1,065	1,186
Living off base	5,631	5,793	5,686	5,656	5,540
Active duty	3,943	3,922	4,051	4,064	4,051
AFRES - 301st FW	1,688	1,871	1,635	1,592	1,489
<b>Active Duty Military Dependents</b>	8,429	12,838	13,494	12,894	10,790
Living on base	1,131	3,558	1,776	1,176	858
Living off base	7,298	9,280	11,718	11,718	9,932
<b>Military Retirees</b>	28,044	28,042	28,852	28,732	29,926
<b>Housing Assets</b>					
Family housing units (available for occupancy)	807	807	757	757	352
Unaccompanied quarters					
Dormitory facilities	15	16	16	16	16
Bed capacity	1,348	1,348	1,348	1,348	1,348

AFRES = Air Force Reserve.  
FW = Fighter Wing.  
FY = Fiscal year.

Sources: U.S. Air Force, 1987, 1988, 1989b, 1990, 1991.

Based on the known geographical residence pattern of off-base military personnel, the following eight local communities in Tarrant County will experience 86 percent of the effects due to closure of the base: Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westover Hills, Westworth Village, and White Settlement.

#### Closure Conditions

With the closure of Carswell AFB and the retention of OL and military activities, site-related population was projected to decline from 28,153 persons in 1991 to 2,926 persons at closure (Table 3.3-3).

Out-migration resulted from base closure due to the loss of military jobs associated with the base. It was assumed that all active duty military personnel and their dependents would out-migrate from the ROI. These persons numbered 16,027 (5,237 active duty on- and off-base and 10,790 dependents) in FY 1991 (see Table 3.3-2). A total of 97.6 percent (15,636)

**Table 3.3-3. Site-Related Population (1988 to Closure)**

	1988	1989	1990	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
<b>Site-Related Population<sup>(c)</sup></b>	30,654	31,974	29,267	28,153	19,128	9,086	2,926
<b>Region of Influence</b>	29,833	31,161	28,527	27,422	18,631	8,846	2,844
Johnson County	799	849	695	776	531	316	177
Parker County	1,671	1,792	1,493	1,633	1,117	645	342
Tarrant County <sup>(d)</sup>	27,462	28,520	26,339	25,013	16,982	7,886	2,371
Benbrook	753	875	839	781	529	224	41
Fort Worth <sup>(d)</sup>	14,151	15,978	14,786	14,781	10,028	4,545	1,235
Lake Worth	62	69	61	62	42	22	9
River Oaks	345	400	384	358	242	103	9
Sansom Park	182	211	202	189	128	54	19
Westover Hills	34	37	33	34	23	12	10
Westworth Village <sup>(d)</sup>	4,101	2,881	2,872	1,779	1,201	452	5
White Settlement <sup>(d)</sup>	1,816	1,475	1,440	1,054	713	291	12

Notes: (a) The 1993 data are provided for January 1, 1993, to September 30, 1993 (date of closure).

(b) Closure conditions begin October 1, 1993.

(c) Site-related population refers to the persons, directly or indirectly, associated with the operations of Carswell AFB. A small proportion reside outside the ROI.

(d) On-base population is included.

ROI = Region of Influence.

Source: NPA Data Services, Inc., 1991.

military personnel and dependents were expected to out-migrate from the ROI. The remaining 2.4 percent of military personnel and their dependents live outside the ROI. It was assumed that none of the civilian personnel (appropriated and non-appropriated fund) employed at Carswell AFB (or their dependents) would leave the area. These personnel would remain in the area because of the area's proximity to both Fort Worth and Dallas metropolitan areas. It is assumed that the region offers substantial employment opportunities. It was further assumed that no retirees would leave the region.

Based on the residential distribution of the out-migrating personnel and their families, the greatest absolute population losses were estimated to occur in Fort Worth (9,744), followed by Westworth Village (1,732), Benbrook (612), and White Settlement (889). The greatest percentage share of population losses were estimated to occur in Westworth Village (74.3 percent), followed by White Settlement (5.8 percent), River Oaks (4.8 percent), and Sansom Park (3.7 percent) (Table 3.3-4).

The closure process occurred over more than 1 year. Base employment levels decreased in both 1992 and 1993 (the year of base closure). The population of the ROI decreased in 1992 by 5,088, which represents 0.4 percent of the preclosure level (see Table 3.3-4). Tarrant County was

**Table 3.3-4. Out-Migrant and Baseline Populations (1988 to Closure)**

	1988	1989	1990	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
<b>Baseline Population (Unadjusted for Closure)</b>							
<b>Region of Influence</b>	1,251,192	1,290,987	1,332,053	1,369,031	1,396,682	1,424,332	1,451,983
Johnson County	90,378	93,710	97,165	101,010	104,086	107,162	110,238
Parker County	60,126	62,412	64,785	67,290	69,286	71,282	73,278
Tarrant County	1,100,688	1,134,865	1,170,103	1,200,731	1,223,310	1,245,888	1,268,467
Benbrook	18,186	18,863	19,564	19,622	19,724	19,835	19,926
Fort Worth	434,267	440,829	447,491	448,547	449,791	451,050	452,243
Lake Worth	4,551	4,571	4,591	4,592	4,602	4,608	4,614
River Oaks	6,641	6,610	6,580	6,568	6,560	6,550	6,540
Sansom Park	3,927	3,927	3,928	3,929	3,929	3,930	3,931
Westover Hills	672	672	672	672	672	672	672
Westworth Village	2,567	2,456	2,350	2,332	2,332	2,323	2,314
White Settlement	15,058	15,263	15,472	15,411	15,390	15,349	15,308
<b>Closure-Related Out-Migrating Population</b>	NA	NA	NA	NA	5,215	12,027	16,027
<b>Region of Influence</b>	NA	NA	NA	NA	5,088	11,734	15,636
Johnson County	NA	NA	NA	NA	18	42	56
Parker County	NA	NA	NA	NA	78	179	238
Tarrant County <sup>(c)</sup>	NA	NA	NA	NA	4,992	11,513	15,342
Benbrook	NA	NA	NA	NA	199	459	612
Fort Worth <sup>(c)</sup>	NA	NA	NA	NA	3,171	7,312	9,744
Lake Worth	NA	NA	NA	NA	9	20	27
River Oaks	NA	NA	NA	NA	91	242	312
Sansom Park	NA	NA	NA	NA	47	109	146
Westover Hills	NA	NA	NA	NA	4	10	13
Westworth Village <sup>(c)</sup>	NA	NA	NA	NA	564	1,300	1,732
White Settlement <sup>(c)</sup>	NA	NA	NA	NA	289	667	889
<b>Baseline Populations (Adjusted for Closure)</b>							
<b>Region of Influence</b>	1,251,192	1,290,987	1,369,031	1,369,031	1,391,594	1,412,598	1,436,347
Johnson County	90,378	93,710	97,165	101,010	104,068	107,120	110,182
Parker County	60,126	62,412	64,785	67,290	69,208	71,103	73,040
Tarrant County	1,100,688	1,134,865	1,170,103	1,200,731	1,218,318	1,234,375	1,253,125
Benbrook	18,186	18,863	19,564	19,622	19,525	19,376	19,314
Fort Worth	434,267	440,829	447,491	448,547	446,620	443,738	442,499
Lake Worth	4,551	4,571	4,591	4,592	4,593	4,588	4,587
River Oaks	6,641	6,610	6,580	6,568	6,469	6,308	6,228
Sansom Park	3,927	3,927	3,928	3,929	3,882	3,821	3,785
Westover Hills	672	672	672	672	668	662	659
Westworth Village	2,567	2,456	2,350	2,332	1,768	1,023	582
White Settlement	15,058	15,263	15,472	15,411	15,101	14,682	14,419

Notes: (a) The 1993 data are provided for January 1, 1993 to September 30, 1993 (date of closure).  
 (b) Closure conditions begin October 1, 1993.  
 (c) On-base population is included.  
 NA = Not applicable.

Sources: North Central Texas Council of Governments, 1992; NPA Data Services, Inc., 1991; U.S. Bureau of the Census, 1990a.



projected to lose 4,992 residents, which is equivalent to 0.4 percent of the preclosure population. During 1993 an additional 10,548 persons were expected to leave the ROI, with 10,350 leaving Tarrant County. The loss over the period 1992 to closure (15,636 persons) represents 1.1 percent of the projected baseline population in the ROI in 1993. At closure, the site-related populations (direct and secondary) associated with Carswell AFB were projected to be 2,926 persons, of which 2,844 would reside within the ROI.

### 3.4 HOUSING

#### Recent Trends

**Regional.** As with population, the regional housing stock steadily grew at an average annual rate of 3.9 percent from 379,169 year-round units in 1980 to 554,225 units in 1990. By 1993 it was anticipated that the regional housing stock would number 565,406 units. All three counties comprising the ROI experienced similar growth rates during this period. The largest number of units were constructed in Tarrant County with the addition of 153,706 units (88 percent of the total increase) over the period 1980 to 1990. Tarrant County contained approximately 89 percent of the regional housing stock in both 1980 and 1990. Much of this is concentrated in Fort Worth, which contained 46 percent of the Tarrant County housing stock in 1980 and 40 percent in 1990. The housing stock in Fort Worth increased by 38,532 units (or 25 percent) over the period 1980 to 1990. Other communities that experienced substantial growth in their housing stock were Benbrook, with an increase of 80 percent, and White Settlement with an increase of 26 percent (Table 3.4-1).

The vacancy rate for owner-occupied housing in the ROI increased from 1980 to 1990. In Tarrant County, the vacancy rate increased from 2.8 percent to 3.5 percent. The Johnson County vacancy rate rose from 1.7 percent to 2.6 percent between 1980 and 1990, and that of Parker County rose from 1.7 percent in 1980 to 2.3 percent in 1990. The vacancy rate for owner-occupied housing in the selected local communities also increased except in the cases of Benbrook, where it fell from 3.5 percent in 1980 to 2.2 percent in 1990, and Westover Hills, which experienced a reduction from 4.4 percent to 2.4 percent over the same time period.

Vacancy rates for rented housing units were considerably higher than for owned units. In 1980, the rate was 11.7 percent in Tarrant County, increasing to 13.6 percent in 1990. For Johnson County the rate increased from 7.5 percent to 14.1 percent, and in Parker County the increase was from 8.1 percent to 12.4 percent. With the exception of Westover Hills (where the vacancy rate remained at zero) and Westworth Village (where the rate fell from 8.7 percent in 1980 to 2.5 percent in 1990), vacancy rates for the selected local communities increased (see Table 3.4-1).

**Table 3.4-1. Housing Units and Vacancy Rates for the Carswell AFB ROI: 1980-1990**

County/Community	Year-Round Number	Average Annual Growth Rate (%)	Owned Housing		Rental Housing	
			Number	Vacancy Rate	Number	Vacancy Rate
1980						
Johnson County	24,660	NA	18,102	1.7	5,020	7.5
Parker County	17,063	NA	12,515	1.7	3,125	8.1
Tarrant County	337,446	NA	203,040	2.8	107,232	11.7
Benbrook	4,646	NA	4,036	3.5	398	10.2
Fort Worth	155,896	NA	88,032	2.0	55,994	9.1
Lake Worth	1,624	NA	1,213	1.1	312	5.7
River Oaks	2,849	NA	2,061	0.3	688	2.5
Sansom Park	1,480	NA	1,003	1.3	387	5.4
Westover Hills	229	NA	216	4.4	3	0.0
Westworth Village	1,120	NA	470	0.0	632	8.7
White Settlement	4,905	NA	2,965	0.9	1,655	8.3
1990						
Johnson County	37,029	4.2	25,483	2.6	7,979	14.1
Parker County	26,044	4.3	18,215	2.3	4,833	12.4
Tarrant County	491,152	3.8	254,907	3.5	183,727	13.6
Benbrook	8,377	6.1	4,964	2.2	2,899	10.5
Fort Worth	194,429	2.2	91,755	4.4	76,519	15.5
Lake Worth	1,778	0.9	1,284	2.4	354	14.3
River Oaks	2,877	0.1	1,955	1.5	727	9.1
Sansom Park	1,482	0.0	950	3.4	398	9.8
Westover Hills	267	1.6	244	2.4	11	0.0
Westworth Village	1,133	0.1	466	1.3	348	2.5
White Settlement	6,167	2.3	3,001	2.1	2,610	10.9

NA = Not applicable.

ROI = Region of Influence.

Sources: U.S. Bureau of the Census, 1980, 1990a.

In 1980, median housing values in Tarrant County were higher than in the three other counties in the ROI (Table 3.4-2); Parker County had the lowest median value. Regional housing values steadily increased from 1980 to 1990, with Parker County showing the greatest increase.

Housing construction in the ROI experienced significant annual variations through the period 1980 to 1990 (Table 3.4-3). Most of the construction activity was concentrated within Tarrant County, which accounted for well

**Table 3.4-2 Housing Tenure, Median Value, and Median Contract Rent for the Carswell ROI, 1980 and 1990**

Area	1980			1990		
	Percent Owner Occupied	Median Value (\$)	Median Monthly Rent	Percent Owner Occupied	Median Value (\$)	Median Monthly Rent
Johnson County	78.3	38,300	159	76.3	61,100	311
Parker County	80.0	37,200	150	79.0	67,600	302
Tarrant County	65.4	44,000	229	58.1	72,900	304
Benbrook	91.0	58,500	315	63.1	85,000	412
Fort Worth	61.1	32,200	200	54.5	59,900	337
Lake Worth	79.5	26,500	153	78.4	50,200	336
River Oaks	75.0	27,400	169	72.4	47,200	326
Sansom Park	72.0	19,700	138	70.5	38,900	298
Westover Hills	98.6	N/A	D	95.7	500,001	1,001
Westworth Village	42.7	32,300	185	57.2	53,200	427
White Settlement	64.2	27,900	190	53.5	47,900	338

D = Withheld for disclosure purposes.

N/A = Not available.

ROI = Region of Influence.

Sources: U.S. Bureau of the Census, 1980, 1990.

**Table 3.4-3. Total Housing Units Authorized in Construction for the ROI and Selected Portions of the Carswell AFB ROI: 1980, 1985, and 1990**

	1980	1985	1990	Average 1980-1990
Johnson County	376	674	103	384
Parker County	106	247	58	137
Tarrant County	11,592	24,699	4,894	13,728
Benbrook	829	239	51	373
Fort Worth	3,644	8,880	1,104	4,543
Lake Worth	10	15	15	13
River Oaks	1	84	2	29
Sansom Park	0	1	0	0.33
Westover Hills	9	2	125	45.3
Westworth Village	2	5	0	2.3
White Settlement	40	265	0	101.6
ROI	12,074	25,620	5,055	14,250.0

ROI = Region of Influence.

Sources: U.S. Bureau of the Census, 1981a, 1986a, 1990b.

over 90 percent of units built in each of these years. The largest proportion (about 25 percent) of units constructed in the ROI was in Fort Worth.

**On Base.** Prior to closure, Carswell AFB had a total of 556 on-base family housing units, with an additional 286 units located off base on the Kings Branch parcel. The housing units vary in type and condition and are located in the southern sections of the base (within the jurisdictions of Westworth Village and White Settlement), and in the northern section of the base in Fort Worth.

Housing in the south part of the base included Kings Branch and Wherry Housing, as well as miscellaneous single-family detached houses along the golf course. There were 174 residences accommodating 286 housing units in the 44-acre Kings Branch housing area. The units were built in the 1950s, have been vacant for the past 3 years, and are in various stages of disrepair. The Wherry Housing area contains 301 one-story, single-family, detached units. All units have been in good condition. There are six scattered single-family housing units surrounding the golf course. These units predate the base and, except for one unit, are reported in good condition and were used as family housing and officer's quarters.

The northern section of the base contains 45 duplexes and 17 eight-plex units located adjacent to the base hospital. There are also four single-family units located on Vandenberg Circle.

Other residential facilities on base include eight dormitories, Visiting Officers' Quarters (VOQ), Visiting Airmen's Quarters (VAQ), and Temporary Lodging Facilities, housing approximately 1,500 people. Two dormitories are located near the WHCA facilities; the others are located in the built-up area of the base, adjacent to education and public facilities/recreation land uses. The VOQ, VAQ, and Temporary Lodging Facilities are located in the northeast quadrant of the base.

#### Closure Conditions

Changes to the migratory-related demand for housing stock in the region and local communities due to the closure of Carswell AFB are presented in Table 3.4-4. The magnitude of potential effects attributable to changes in demand due to out-migration for housing follow the pattern of out-migrant population changes, and were projected to primarily affect Tarrant County and the communities of Benbrook, Fort Worth, Westworth Village, and White Settlement. Although the magnitude of change is less, effects on the housing vacancy rates in the communities of River Oaks and Sansom Park were also projected.

Of the total of 5,237 active duty military personnel (not including cadets and reserves) stationed at Carswell AFB in FY 1991, the majority (4,051

**Table 3.4-4. Migratory-Related Housing Units Demands, 1991 to Closure**

	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
Johnson County	16	11	4	0
Parker County	69	47	17	0
Tarrant County	3,854	2,600	962	0
Benbrook	177	120	44	0
Fort Worth	2,582	1,742	645	0
Lake Worth	8	5	2	0
River Oaks	81	55	20	0
Sansom Park	42	29	11	0
Westover Hills	4	3	1	0
Westworth Village	239	161	60	0
White Settlement	170	115	42	0
Remainder of Tarrant County	551	370	137	0
ROI	3,939	2,658	983	0

Notes: Data are migratory-related housing demands.

(a) The year 1993 represents the period from January 1, 1993, to September 30, 1993 (date of closure).

(b) Closure conditions began October 1, 1993.

ROI = Region of Influence.

personnel or 77 percent) lived off base while the remainder resided in on-base military family housing or unaccompanied housing (dormitories) (see Table 3.3-2). Based on the assumption that only the active duty military personnel would out-migrate at closure, only the local housing market would have been affected by personnel living off base. With the departure of the active duty military personnel and their dependents, it was projected that 3,939 housing units will be vacated in the ROI. A total of 3,854 of these would be in Tarrant County. Of this county total, it was projected that 2,582 would be in Fort Worth, 239 in Westworth Village, 125 in Benbrook, and 170 in White Settlement. In terms of the 1990 housing stock, this represents a reduction of less than 1 percent in the ROI and Tarrant County. The addition of these housing units to the stock of vacant units would have increased the housing vacancy rates in the affected communities. The vacancy rate could have increased in River Oaks (up from 6.78 percent to 9.59 percent), Sansom Park (up from 9.04 percent to 11.88 percent), White Settlement (increase from 9.02 percent to 11.77 percent), and in Westworth Village, where the vacancy rate was projected to rise from 28 percent to 49 percent.

### **3.5 PUBLIC SERVICES**

The key public services examined in this analysis are municipal and county government, public education, police and fire protection, and health care. In the Carswell AFB region, providers of these services are county and city governments, public school districts, police and fire departments, and hospital and clinics. The following section presents a discussion of the preclosure and closure conditions for each of these major public services in the ROI, focusing on those service providers that are geographically closest to Carswell AFB and/or maintained the closest relations with the base.

The levels of general public service are usually determined by the ratio of employees (e.g., municipal employees, sworn peace officers, professional fire fighters) to serviced population and by student/teacher ratios at the primary and secondary public school levels. In addition, staffing per area of service may be affected by alterations to service area boundaries (area-generated effects).

#### **3.5.1 Governmental Structure**

##### **Recent Trends**

**Tarrant County.** Tarrant County's general governing body is the Commissioners Court, which is composed of four commissioners and the County Judge. One commissioner is elected from each of the four precincts and the County Judge is elected at large. Tarrant County encompasses an area of 869 square miles. The number of Tarrant County employees was 3,348 in 1992. The Sheriff's Department is the largest county department with 975 employees, followed by the Community Supervision and Corrections Department with 290 employees, and the District Attorney's Department with 240 employees. Overall, the county maintains a level of service of 2.7 personnel per 1,000 population.

**City of Fort Worth.** Fort Worth was incorporated in 1873 and operates under a council/city manager form of government. Fort Worth contains approximately 295 square miles of land. The city employed 5,238 persons in 1992. The three largest city departments are police (1,482), fire (686), and water/sewer (857). Fort Worth maintains a level of service of 11.6 personnel per 1,000 population.

**City of River Oaks.** River Oaks was incorporated in 1949 and operates under a mayor/council form of government. River Oaks contains approximately 4 square miles of land and employed approximately 60 employees providing a level of service of 9 personnel per 1,000 population. The three largest city departments are police (24), streets/sanitation (18), and administration (7).

**Town of Westover Hills.** Westover Hills was incorporated in 1937 and has a mayor/town council form of government. The town contains 0.7 square miles and employed 18 persons. Westover Hills provides a level of service of 27 personnel per 1,000 population.

**City of Westworth Village.** Westworth Village was incorporated in 1941 and operates under a mayor/council form of government. Five council members are elected at large. Westworth Village contains 2.5 square miles of land and had 13 employees. The city provides a level of service of 5.6 personnel per 1,000 population. The three largest city departments are police, court, and water.

**City of White Settlement.** White Settlement was incorporated in 1941 and operates under a council/city manager form of government. White Settlement contains approximately 5.5 square miles of land. The city had 92 employees in 1991 and provided a level of service of 6 personnel per 1,000 population. The three largest city departments are police (38), parks (14), and streets/drainage (13).

#### Closure Conditions

Reductions in levels of on-base employment due to closure were projected to result in reductions in migratory-related demands for local government employees. Table 3.5-1 shows this reduction in demand for local government employees arising from closure of Carswell AFB.

**Table 3.5-1. Migratory-Related Demand for Local Government Employees, 1991 to Closure**

Jurisdiction	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
Tarrant County	36	24	9	0
City of Fort Worth	103	69	26	0
City of River Oaks	3	2	1	0
City of Westover Hills	0	0	0	0
City of Westworth Village	5	3	1	0
City of White Settlement	4	3	1	0
<b>Total</b>	<b>151</b>	<b>101</b>	<b>38</b>	<b>0</b>

**Notes:** Migratory-related local government employees represent the effects of migratory related population changes in the number of government employees required to maintain level-of-service ratios. These numbers include only off-base population out-migration from affected communities. Data are rounded to the nearest whole employee; therefore, zeros may equal less than one employee. Zero at closure represent zero employees.

(a) The year 1993 represents the period from January 1, 1993, to September 30, 1993 (date of closure).

(b) Closure conditions began October 1, 1993.

The closure of Carswell AFB was projected to result in an out-migration of 15,342 persons from Tarrant County, of which 13,297 lived off base. This

decline in population could have corresponded to a reduction of up to 151 local government employees from the six primary jurisdictions to maintain historic level of service ratios.

Reductions in local government employment as a result of out-migration generated from base closure was projected at 36 positions or 1.1 percent of the 1992 staffing level for Tarrant County, and 103 or 2 percent for Fort Worth. Reductions in River Oaks could have reached three persons (5 percent), five (38.5 percent) in Westworth Village and four (4.3 percent) in White Settlement. Westover Hills was not projected to reduce local government employment levels due to closure.

Projected reductions in population attributable to base closure in Tarrant County and the communities of Fort Worth, River Oaks, Westover Hills, Westworth Village, and White Settlement imply that decreases in municipal staffs could maintain the historic levels of service. Potential reductions in municipal and county government personnel were unlikely in Tarrant County, Fort Worth, and White Settlement since the populations of these areas were growing at an average annual rate that would most likely regain the projected population reductions within 4 years after closure (1997). However, the communities of River Oaks and Westworth Village were projected either to grow marginally or to decline in their resident population levels, so it is unlikely that the reduction in positions that was projected due to base closure would be offset by increases in population through other means. Westover Hills was not projected to experience a large enough loss in population to reduce staffing levels.

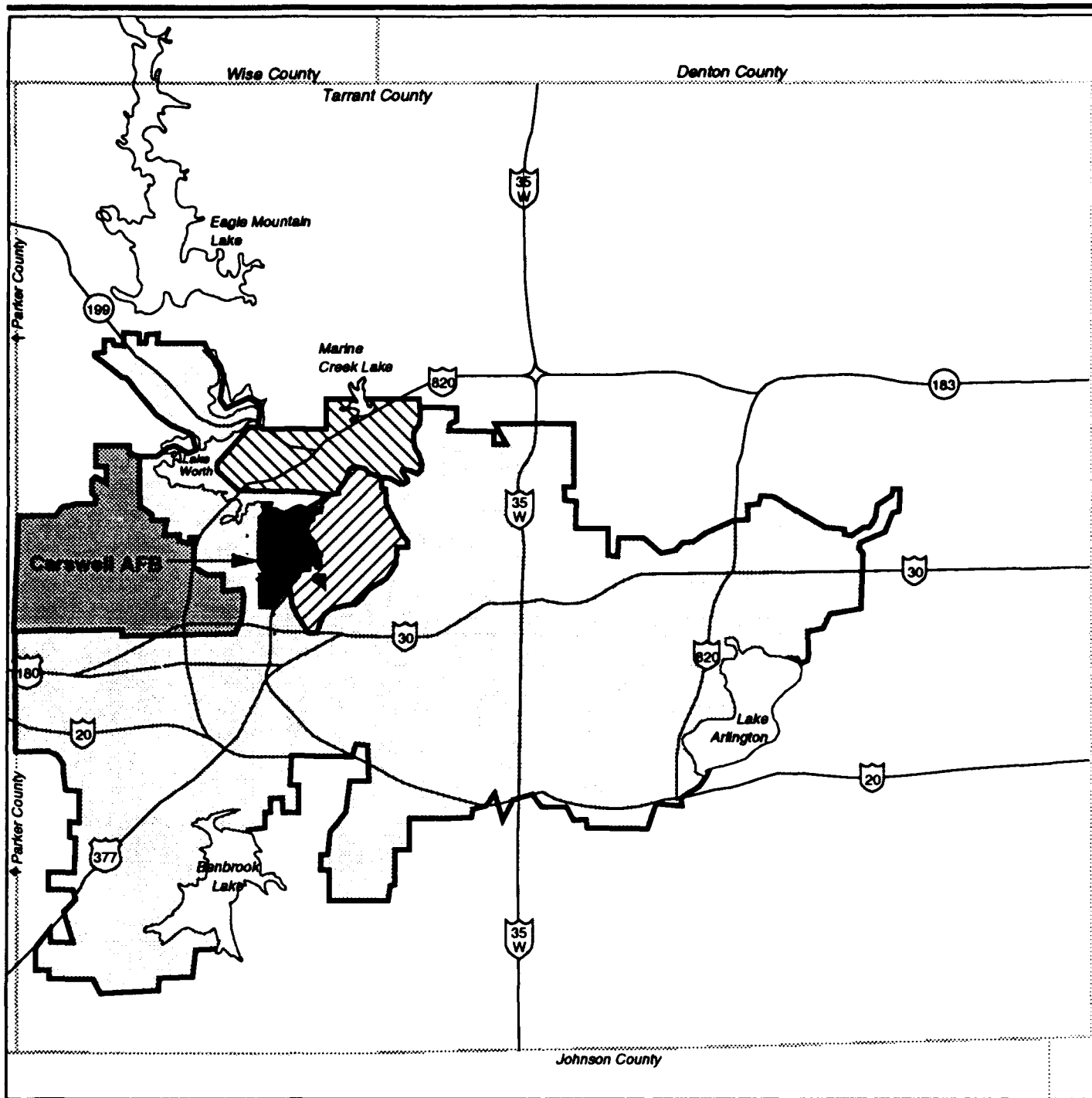
In some cases, a jurisdiction may maintain the same staff level, resulting in a higher level of service ratio. Area-generated staffing level changes would not occur as jurisdictional boundaries are not altered.

### **3.5.2 Public Education**





#### **Recent Trends**

The majority of the population who were associated with Carswell AFB (active duty and civilian employees) resided in Tarrant County. Approximately 2,044 military personnel and dependents were living on Carswell AFB in September 1991. Because no schools were located on Carswell AFB, dependents of military personnel living on base attended school in the Fort Worth ISD. Approximately 95 percent of Carswell AFB military personnel who were living off base resided in Tarrant County. Of this group, most resided within four school districts: Castleberry, Fort Worth, Lake Worth, and White Settlement. Figure 3.5-1 illustrates the locations of the four school districts.





#### EXPLANATION

-  Castleberry Independent School District
-  Fort Worth Independent School District
-  Lake Worth Independent School District
-  White Settlement Independent School District



#### School District Boundaries

Figure 3.5-1

**Castleberry Independent School District.** The Castleberry ISD had an enrollment of 2,810 during the 1991-1992 school year. Enrollments, teaching staff, and service ratios are presented in Table 3.5-2. Table 3.5-3 shows recent enrollments that increased by an average annual rate of 2.1 percent from 1988-1989 through 1990-1991. Approximately 57 students or 2 percent of district enrollments were dependents of military and civilian personnel working or living on Carswell AFB in 1990-1991 (Table 3.5-4).

**Table 3.5-2. Public School District Enrollments and Student-Teacher Ratios**

School District	Enrolled	Teachers	Students/ Teacher
<b>1989-1990</b>			
Castleberry ISD	2,786	170	16
Fort Worth ISD	67,678	4,450	15
Lake Worth ISD	1,475	96	15
White Settlement ISD	4,035	233	17
<b>1990-1991</b>			
Castleberry ISD	2,861	170	17
Fort Worth ISD	68,002	4,552	15
Lake Worth ISD	1,430	95	15
White Settlement ISD	4,164	238	17
<b>1991-1992</b>			
Castleberry ISD	2,810	170	17
Fort Worth ISD	69,046	4,828	14
Lake Worth ISD	1,485	98	15
White Settlement ISD	4,277	241	18

ISD = Independent School District.

Sources: Gutierrez, 1992; Pitts, 1992; Welch, 1992; Winn, 1992.

There are five schools in the district: three elementary schools, one junior high, and one high school. In 1992, the student/teacher ratio in the district was 17:1 (see Table 3.5-4). The district was operating at capacity and had no plans for expansion.

**Fort Worth Independent School District.** In 1990-1991, the Fort Worth ISD had an enrollment of 68,002 students in kindergarten through twelfth

**Table 3.5-3. Historic Fall Enrollments in Public School Districts in  
Carswell AFB Area, 1988-1990**

School District	1988	1989	1990	Average Annual % Change
Castleberry ISD	2,745	2,786	2,861	2.1
Fort Worth ISD	65,236	67,678	68,002	2.1
Lake Worth ISD	1,480	1,475	1,430	-1.7
White Settlement ISD	3,902	4,035	4,164	3.5

ISD = Independent School District.

Sources: Gutierrez, 1992; Pitts, 1992; Welch, 1992; Winn, 1992.

grades. District enrollment has increased at an average of 2.1 percent per year, from 1988-1989 to 1990-1991.

Approximately 1.6 percent of students enrolled in the district were related to personnel living or working at Carswell AFB, including 712 military dependents and 350 civilian dependents in 1990-1991. School-age dependents of military personnel who were living on base attended three schools in the Fort Worth ISD: Burton Elementary School, Stripling Middle School, and Arlington Heights High School.

Facilities of the Fort Worth ISD include 66 elementary schools, 19 junior high schools, and 12 senior high schools. In 1992, all but two of the district's schools were operating at or above capacity. The student-teacher ratio for the Fort Worth ISD was 15:1 in 1990-1991.

**Lake Worth Independent School District.** The Lake Worth ISD had an enrollment of 1,430 in 1990-1991. Table 3.5-2 shows enrollments, which decreased by an average annual rate of 1.7 percent from 1988-1989 through 1990-1991. In FY 1990, approximately 135 or 9.5 percent of district enrollments were dependents of military and civilian personnel working or living on Carswell AFB.

There are four schools in the district including two elementary schools, one junior high, and one high school. The student/teacher ratio in the district was 15:1 in 1990-1991.

**White Settlement Independent School District.** The White Settlement ISD had an enrollment of 4,164 in 1990-1991. Table 3.5-2 shows enrollments, which increased by an average annual rate of 3.3 percent from 1988-1989 through 1990-1991. In 1990-1991, 410 students or 9.8 percent of district enrollments were dependents of military and civilian personnel working at Carswell AFB.

**Table 3.5-4 Enrollment Related to Carswell AFB - Selected School Districts in the ROI,  
1989-1991**

<b>Enrollment Breakdown</b>	<b>Fall 1989</b>	<b>Fall 1990</b>	<b>Fall 1991</b>
<b>Castleberry ISD</b>			
Total enrollment	2,786	2,861	2,810
Military dependents	29	30	20
Civilian dependents	27	27	18
Total AFB-related dependents	56	57	38
AFB-related percentage of total enrollment	2.0	2.0	1.4
<b>Fort Worth ISD</b>			
Total enrollment	67,678	68,002	69,046
Military dependents	597	712	731
Civilian dependents	459	350	332
Total AFB-related dependents	1,056	1,062	1,063
AFB-related percentage of total enrollment	1.6	1.6	1.5
<b>Lake Worth ISD</b>			
Total enrollment	1,475	1,430	1,485
Military dependents	33	32	22
Civilian dependents	108	104	70
Total AFB-related dependents	141	136	92
AFB-related percentage of total enrollment	9.5	9.5	6.2
<b>White Settlement ISD</b>			
Total enrollment	4,035	4,164	4,277
Military dependents	336	349	235
Civilian dependents	59	61	41
Total AFB-related dependents	395	410	276
AFB-related percentage of total enrollment	9.8	9.8	6.4

ISD = Independent School District.

ROI = Region of Influence.

Sources: Gutierrez, 1992; Welch, 1992; Winn, 1992

There are six schools in the district: four elementary schools, one junior high, and one high school. The student/teacher ratio in the district was 17:1 in 1990-1991. Four of the district's schools, including the high school, the middle school, and North and West elementary schools, were

operating at capacity, and plans were underway for constructing additional classrooms at each of these campuses.

#### Closure Conditions

Potential effects to public school enrollments and teaching staff due to base closure are presented in Table 3.5-5. The dependents of active duty military personnel that were expected to out-migrate would have reduced enrollments by the following numbers: Castleberry ISD, 30 or 1 percent of preclosure enrollments; Fort Worth ISD, 731 or 1.1 percent; Lake Worth ISD, 32 or 2.2 percent; and White Settlement ISD, 349 or 8.4 percent of 1990-1991 enrollments. Approximately one-third of the decrease would have occurred in 1992 and the remainder in 1993.

**Table 3.5-5. Migratory-Related Enrollments, 1991 to Closure**

	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
Castleberry ISD	30	20	7	0
Fort Worth ISD	712	731	183	0
Lake Worth ISD	32	22	8	0
White Settlement ISD	349	235	87	0

Notes: (a) 1993 represents the period from January 1, 1993, to September 30, 1993 (date of closure).

(b) Closure represents October 1, 1993 conditions.

ISD = Independent School District.

Sources: Gutierrez, 1992; Welch, 1992; Winn, 1992.

As a result of closure, migratory-related demand for staff support was expected to decrease by approximately 2 positions in Castleberry ISD, 49 positions in Fort Worth ISD, 2 in Lake Worth ISD, and 21 in White Settlement ISD (Table 3.5-6). Some of the reductions were projected to be offset by baseline growth.

**Table 3.5-6. Migratory-Related Demand for Teachers, 1991 to Closure<sup>(a)</sup>**

	1991	1992	1993 <sup>(b)</sup>	Closure <sup>(c)</sup>
Castleberry ISD	2	2	1	0
Fort Worth ISD	49	37	18	0
Lake Worth ISD	2	2	1	0
White Settlement ISD	21	16	5	0

Notes: (a) Estimate based on student-teacher ratios. Data show the level of staffing that is attributable to operations occurring on base for that year.

(b) 1993 represents the period from January 1, 1993, to September 30, 1993 (date of closure).

(c) Closure represents October 1, 1993, conditions.

ISD = Independent School District.

Without closure, Fort Worth ISD enrollments were expected to increase by approximately 1 percent per year (Gutierrez, 1992), and Castleberry ISD enrollments were expected to remain approximately level (Winn, 1992). White Settlement ISD enrollments were expected to increase by approximately 2.5 percent per year without closure (Welch, 1992). Based upon the average annual change since 1987-1988, enrollments in the Lake Worth ISD were expected to increase by approximately 0.1 percent per year without closure.

Although reductions in base-related demand for teacher and facilities could occur, enrollment effects of base closure may be distributed by grade level so that reductions in teaching staff or facilities may not be required or practical.

### **3.5.3 Police Protection**

#### **Recent Trends**

Police protection in the Carswell AFB region was provided by on-base security police, the surrounding community police departments, and the Tarrant County Sheriff's Department. Several departments have holding facilities for detainees, but the principal correctional facility is the Tarrant County Jail, operated by the Sheriff's Department. This is the only facility located in Fort Worth approved for holding felons.

**Carswell AFB.** Prior to closure, the Carswell AFB 7th Security Police Squadron operated with a 24-hour staff of 10 to 13 officers per shift for 3 shifts per day. The squadron was staffed with 322 personnel, which represented a decrease of 190 positions since 1989 when the base was operating at full strength. The Security Police operated out of a single location, Building 1504. Building 1504 was secured and could accommodate 12 inmates. The equipment and facilities were rated above average in terms of physical condition. The equipment associated with the Security Police consisted of 44 vehicles, including 7 patrol sedans, 3 multi-purpose vehicles, and 7 armored special purpose "peacekeeper" vans. Central Security Control (CSC) was located in Building 1629. The CSC also utilized seven trained military work dogs for drug and explosive detection.

There were security personnel continuously positioned on the flightline, where their mission was twofold: to provide flightline security and to protect the F-16 aircraft associated with the 301st FW. Personnel assigned to provide security to the aircraft were removed in 1993.

The 301st FW Security Police is based in the retained military area and consists of one full-time employee. This position is designated as a special function and had no connection with the 7th Bomb Wing.

There were no mutual aid agreements in place with the neighboring communities, except the vacated Kings Branch Housing area. White Settlement would assist on an as-needed basis to calls for assistance at the base.

**Tarrant County Sheriff's Department.** The Tarrant County Sheriff's Department has jurisdiction over the entire county, but actively patrols unincorporated areas totaling about 250 square miles (almost 29 percent) of the 869-square-mile region.

In 1991, the department contained 1,129 sworn officers, 27 auxiliary reserve personnel, and 91 administrative support staff, including the jailers who staffed the detention centers. The department operated out of two facilities. Both facilities are located in downtown Fort Worth and were considered to be in new or good condition. The department was equipped with 19 marked patrol cars and 64 unmarked vehicles. The vehicles under the County Fire Marshall's authority were dispatched out of the Sheriff's Department.

Mutual-aid agreements were in place with most of the communities within the county. The Sheriff's Department reported that they received, on average, five calls per day for mutual-aid assistance. They would respond on an as-available basis, depending on their commitment of resources and distance to the call. The Sheriff's Department may also call upon various local communities for assistance; the selection of the community to be called is based on the distance to the call.

The Sheriff's Department provides the main holding/detention facilities for the communities within the county. They operate four facilities located throughout the county that provide varying levels of security. All jailers are sworn officers.

The service planning ratio utilized by the Sheriff's Department was one officer per 1,000 population.

**City of Fort Worth.** Fort Worth supported the largest police department within the Carswell AFB ROI. The department operated out of five locations throughout the city. As of December 31, 1991, the department was staffed with 942 sworn officers, 303 civilians, and 101 school crossing guards. These facilities and personnel provided service to an area that encompassed approximately 295 square miles. The planning ratio utilized by the department to allocate sworn officers was based on 1.7 officers per beat, and was equivalent to a level of service of 2.1 officers per 1,000 persons. The department had a contract with Tarrant County Sheriff's Department to provide jail services.

Of the 591 vehicles maintained by the police department in 1992, 255 were full-sized patrol cars, 112 were detective cars, and 89 were unmarked detective and undercover cars. The remainder ranged from mopeds to pickups, vans, and backhoes.

In 1992, the Fort Worth Police Department participated in an interlocal agreement with 42 area agencies under the Greater Dallas/Fort Worth Regional Law Enforcement Task Force. This contract is renewed every year. The agencies assist one another in areas of mutual interest on an as-needed basis.

**City of River Oaks.** The service area for the River Oaks Police Department is the city limits of River Oaks, which extends over 4.5 square miles. The police department is housed in a centrally located facility. The city employed a staff of 16 sworn officers, 12 reserve officers, and 8 civilians. The level-of-service ratio for the department is 2.4 officers per 1,000 persons. The city of River Oaks uses calls for service instead of planning ratios in determining the required level of staffing.

Equipment for the department included nine vehicles, five of which were marked patrol cars and four were unmarked vehicles. The holding capacity of the city jail was four persons, in two-person cells.

The River Oaks Police Department participated in a written countywide mutual assistance agreement with 33 police departments, the Sheriff's Department, and the Department of Public Safety. This mutual-aid agreement is frequently utilized among River Oaks, Sansom Park, Westworth Village, and Fort Worth for back-up assistance on major incidents. Fort Worth also assists with specialized investigation and crime-scene processing.

**Town of Westover Hills.** The Westover Hills Police Department employed 12 sworn officers, 2 reserve officers, and 1 civilian in charge of communications. The level-of-service ratio was 17.9 officers per 1,000 persons. The department consists of one station that is inside the town hall.

The service area of responsibility for the department is the town limits of Westover Hills, which covers 10 square miles. The department was equipped with four marked vehicles.

The department participated in an interjurisdictional agreement with the Fort Worth Police Department. This agreement is utilized in cases of major accidents that occur near the city limits, as well as on an as-needed basis by either agency.



**City of Westworth Village.** The Westworth Village Police Department operates out of a single facility, which was staffed with four sworn officers, four communications specialists, and ten nonpaid reserve officers in 1991. The department was equipped with four vehicles (three patrol units and one motorcycle) to patrol a 2.5-square mile service area.

In 1992, Westworth Village had informal mutual-aid agreements in place with all of the police departments within Tarrant County and the Dallas Police Department.

There is no formal planning ratio utilized by the Westworth Village Police Department to allocate staff. The staffing level was equivalent to 2.8 sworn officers per 1,000 population.

**City of White Settlement.** The jurisdiction of the White Settlement Police Department covers approximately 5.5 square miles, encompassing the city limits of White Settlement.

The police department staff consisted of 23 sworn officers, 3 reserve officers, and 9 administrative personnel and provided a level-of-service ratio of 1.5 officers per 1,000 persons. All were housed in a centrally-located facility.

In 1992, the fleet consisted of seven marked (including a Drug Awareness Resistance Education [DARE] pickup), and five unmarked cars. The department administers five jail cells where inmates are detained until transferred to the Tarrant County Jail.

The White Settlement Police Department maintained mutual-aid agreements with several police departments in the area and the cities of Dallas, Fort Worth, and Arlington.

#### Closure Conditions

Projected effects on police protection in the ROI resulting from the closure of Carswell AFB are presented in Table 3.5-7. These changes reflect the reduction in demand for police employment associated with out-migrating population, while maintaining historic service levels, and excluding effects associated with other non-base-related growth.

Potential effects resulting from changes in demand for police protection services reflected the pattern of migratory population changes in the region. Results may have included a permanent reduction in staffing of 19 police officers in Fort Worth, 2 in Westworth Village, 2 officers in Tarrant County, and 1 in White Settlement. The communities of River Oaks and Westover Hills were not projected to experience a large enough loss in population to reduce staffing levels.

**Table 3.5-7. Migratory-Related Demand for Police Officers,  
1991 to Closure**

	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
Tarrant County	2	1	1	0
Fort Worth	19	13	5	0
River Oaks	0	0	0	0
Westover Hills	0	0	0	0
Westworth Village	2	2	1	0
White Settlement	1	1	0	0
<b>Total</b>	<b>24</b>	<b>17</b>	<b>7</b>	<b>0</b>

Notes: Effects of migratory-related population changes on number of police officers required to maintain level-of-service ratios. Data are rounded to nearest whole police officer; thus, zeros may equal less than one person. Zero at closure, however, represents zero employees.

(a) The year 1993 represents the period from January 1, 1993, to September 30, 1993 (date of closure).

(b) Closure began October 1, 1993.

By December 1992, the draw down of the security police squadron was initiated with full draw down completed in September 1993. The OL, at closure, provides security to the base area (excluding the retained military property) as long as the base remains in caretaker status.

At closure, the 301st FW assumed responsibility for providing security to the flightline, aircraft, and the retained military areas. Building 1629, located on the flightline, serves as headquarters.

In some cases, a local jurisdiction may maintain the same staff level, resulting in a higher level of service ratio. Area-generated staffing level changes would not occur as jurisdictional boundaries are not altered.

#### **3.5.4 Fire Protection**

##### **Recent Trends**

Fire protection in the Carswell AFB region was provided by the base and by city fire departments. Staffing for these departments ranges from full-time, highly-trained fire fighters to part-time volunteer forces. Each fire department provides assistance to other departments to the extent possible and on an as-needed basis through formal and informal mutual-aid agreements. Tarrant County does not maintain a fire fighting service and relies upon the municipalities to provide fire protection.

**Tarrant County Support Unit.** Approximately 250 of the 869 square miles of Tarrant County are unincorporated and served by area fire departments to

provide fire and emergency medical services. Tarrant County does not operate a fire department but does provide a fire suppression support unit. The unit consisted of approximately 16 volunteers and 9 pieces of equipment, with a planning staff ratio of approximately 1 volunteer fire fighter per 1,000 population.

The Tarrant County Support Unit does not operate under a mutual aid agreement, as it is a county-owned organization that has jurisdiction to operate within Tarrant County. The Support Unit operates out of a single facility that is centrally located in Tarrant County.

The equipment utilized by the Support Unit members has included an air truck (mobile oxygen tank and air cascade replenishing unit) and trailer. The unit also has provided a 5-ton wrecker and a 5,000-gallon water tanker to fight fires in rural areas where hydrants or other sources of water are not available.

**City of Fort Worth.** The Fort Worth Fire Department provides fire protection to a service area covering approximately 295 square miles. The department had 662 fire fighters, all of whom were certified emergency medical technicians (EMTs), except those at the airport fire department (who are trained for air crashes). Of those certified as EMTs, 12 were also paramedics. This staffing corresponded to a level-of-service ratio of 1.5 full-time fire fighters per 1,000 persons.

Vehicles operated by the department included 27 engines, 5 trucks, and 10 quints (pumper trucks with aerial ladders). The brush trucks had a holding capacity ranging from 250 to 500 gallons, and the fire engines carried up to 1,500 gallons.

The department operates out of 35 stations, housing 45 fire companies, distributed throughout the city.

There were a variety of mutual-aid agreements in place, most of which were informal, noncontractual commitments. The city has also provided contracted fire protection to several communities including Benbrook, Westworth Village, and Westover Hills. Calls for assistance ranged from 30 to 45 per year, primarily during the grass fire season (July to September).

**City of River Oaks.** River Oaks had a volunteer fire department comprised of 46 fire fighters (corresponding to level-of-service ratio of 7 fire fighters per 1,000 population), 5 vehicles, and 3 pumpers each with a 1,000-gallon per-minute (gpm) capability. Of the 46 fire fighters, 23 were also certified paramedics. The department was based out of a single 5,000 square foot facility that was constructed in 1989.

The department was also responsible for providing service to the city of River Oaks, a 4.5 square mile service area. The department had six mutual-aid agreements in place with neighboring communities.

**Town of Westover Hills.** Westover Hills had received fire protection through a formal mutual-aid agreement with the City of Fort Worth Fire Department. This agreement was not supplemented by the town in any manner (Berry, 1992).

**City of Westworth Village.** Westworth Village maintained a volunteer fire department and ambulance service that was staffed with 17 volunteer firemen. Thirteen of these firemen were also trained as EMTs. These personnel provided service to an area of 2.5 square miles. The department was located in a single facility located downtown that contained a 3-bay area for vehicles. This station was not staffed, and calls for service were received through Westworth Village's Police Department communication center. Calls were dispatched over a pager system, and all personnel responded on an as-available basis.

In 1992, vehicles utilized by the department included two pumper trucks and an ambulance. Personnel levels were based on the average number of yearly calls, the size of service area, and the population within the service area. The department's personnel (a planning ratio of 7.3 firefighters per 1,000 population was used) and equipment was considered adequate.

The Westworth Village Fire Department has participated in a variety of mutual-aid programs, some of which were formal written agreements, and others that were informal verbal commitments.

**City of White Settlement.** The White Settlement Fire Department was staffed by volunteers and provided fire protection services to an area 5.5 square miles in size.

The department was staffed by 40 volunteers, 17 of whom were EMT-certified, and operated out of a single facility located in the center of town. A ratio of 2.6 fire fighters per 1,000 population was used. The department participated in signed mutual-aid agreements with Aledo, Benbrook, Fort Worth, Lake Worth, River Oaks, and Saginaw, which are utilized on an as-needed basis.

The department was equipped with three 1,250-gpm-pumpers, one tanker, one quint, one rescue van, and a four-wheel-drive truck.

**Carswell AFB.** Prior to the announcement of closure, the 7th Civil Engineering Fire Protection Branch at Carswell AFB consisted of 64 military and civilian personnel working two 24-hour rotating shifts. The fire department was staffed with 60 fire fighter positions comprised of 20

civilians and 40 active duty personnel. There were 17 fire fighters also trained as EMTs. All personnel and equipment were housed in one facility that was located adjacent to the main runway.

The primary mission of the base fire department was to provide fire, crash, and rescue services along the flightline. In addition to protecting both based and transient aircraft, they also provided protection to 298 on-base facilities and 807 military family housing units. The base fire department also provided fire protection to AF Plant #4 on the runway during periods of aircraft tests. The base maintained mutual-aid agreements with Tarrant County and the cities of Fort Worth and Westworth Village. Assistance was provided to Tarrant County two to three times per year.

In addition to fire prevention services, the base fire department also provided fuel spills assistance on base. They responded to calls, identified the size of the spill, and contained the contamination as part of the base's Emergency Management Program.

Prior to closure, the Carswell AFB fire department operated 11 vehicles, all of which were to be transferred to the 301st FW at closure for continued use on the flightline.

All base fire fighters were cross trained to handle both crash and runway hazards as well as structural fires. The EMTs were part of the first responder units in association with the base hospital ambulance. At closure, the EMTs were to remain while the ambulance services may have been contracted through the city of Fort Worth.

#### Closure Conditions

Changes in demand for local fire fighter employees as a result of the closure of Carswell AFB are shown in Table 3.5-8. Reductions in fire fighting staff were projected to decrease by 1 in Westworth Village, 13 in Fort Worth, and 2 each in White Settlement, River Oaks, and Tarrant County.

With Carswell AFB closed and in caretaker status, the Carswell AFB Fire Department no longer provides fire protection services. Local fire districts and communities are not able to rely on mutual-aid assistance in fire protection, fire suppression, rescue, or hazardous materials emergencies from the base. An OL fire protection team operates an interim fire department at the base using operations fire fighting equipment.

In some cases, a jurisdiction may maintain the same staff level, resulting in a higher level of service ratio. Area-generated staffing level changes would not occur as jurisdictional boundaries are not altered.

**Table 3.5-8. Migratory-Related Demand for Fire Fighters, 1991 to Closure**

	1991	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
Tarrant County	2	1	1	0
Fort Worth	13	9	3	0
River Oaks	2	2	1	0
Westover Hills	0	0	0	0
Westworth Village	1	1	0	0
White Settlement	2	1	0	0
Total	20	14	5	0

**Notes:** Effects of migratory-related population changes on number of fire fighters required to maintain level-of-service ratios. Data are rounded to the nearest whole fire fighter; thus, zeros may equal less than one fire fighter. Zero at closure, however, represents zero employees.

(a) The year 1993 represents the period from January 1, 1993, to September 30, 1993 (date of base closure).

(b) Closure represents October 1, 1993, conditions.

### 3.5.5 Health Services

#### Recent Trends

The ROI for the Carswell AFB health care system is Tarrant County. In 1992, there were 2,030 medical doctors, 641 dentists, 8,223 registered nurses (RNs), and 4,262 licensed vocational nurses (LVNs) practicing in this region. Approximately 97 percent of the active duty military and their dependents resided in this county, and the majority were living in the communities of Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westover Hills, Westworth Village, and White Settlement. Prior to closure, the R.L. Thompson Strategic Hospital located on Carswell AFB made available a wide range of health care specialties and services to an estimated 142,000 retirees and their dependents who were residing within the 40-mile radius catchment area.

#### **Community Health Care Services**

Ten of the largest hospitals, ranked by number of beds, were identified in Tarrant County. Harris Methodist Medical System provided four acute care facilities in Tarrant County. The HEB/Harris Methodist Springwood facility had 314 beds with an occupancy rate of 54.2 percent. The facility had provided a full range of services.

In 1992, the Harris Methodist-Fort Worth Facility consisted of 628 beds with an overall occupancy rate of 66 percent.

In 1992, Harris Methodist Northwest had 48 beds with an overall occupancy rate of 37.8 percent. This hospital listed an intensive care unit (ICU), a 24-hour minor emergency clinic, and a physical therapy unit as its specialty services.

In 1992, Harris Methodist Southwest was an 88-bed facility, with an overall occupancy rate of 42.5 percent. This hospital has offered single maternity rooms, day surgery, radiology and laboratory diagnostics, and provides community education.

In 1992, Saint Joseph Hospital was a 475-bed facility with an overall occupancy rate of 67 percent. The hospital has provided a full range of services with a sports medicine center.

In 1992, the Osteopathic Medical Center of Texas provided 265 beds with an overall occupancy rate of 63.4 percent. This facility has provided outpatient surgery, an ICU, a trauma center, and a number of specialized health care facilities.

In 1992, the Cook-Fort Worth Children's Hospital provided the region with 208 beds and had an overall occupancy rate of 67.6 percent. This hospital has offered a number of specialized pediatric medical services. The facility has also utilized an air/ground ambulance service.

In 1992, John Peter Smith Hospital within the Tarrant County Hospital District was a 429-bed facility with an overall occupancy rate of 81.3 percent. This hospital has provided a full range of medical services.

In 1992, the All Saints Episcopal Hospital system had two acute care facilities hospitals in Tarrant County. All Saints Episcopal-Cityview, with 71 beds, had an overall occupancy rate of 50.5 percent. The hospital has provided a full range of medical services.

All Saints Episcopal-Fort Worth, a 533-bed facility, had an overall occupancy rate of 58 percent. In addition to the services listed at All Saints Episcopal-Cityview, this facility has also provided a number of specialized facilities.

#### **Military Health Care Services**

Military hospitals have referral agreements with civilian hospitals in the region for services that are not available at the military facility; the costs for provision of these services are reimbursed by DOD to the civilian facility. Apart from these services, active duty military do not generally use private sector health care services. The hospital refers patients to military and civilian hospitals depending on the care needed. The military hospitals in Texas include Sheppard U.S. Air Force Regional Hospital located at Sheppard AFB, approximately 116 miles from Carswell AFB; Wilford Hall

U.S. Air Force Medical Center at Lackland AFB, located approximately 270 miles from Carswell AFB; and Brooke Army Medical Center at Fort Sam Houston, located approximately 250 miles from Carswell AFB. The civilian hospitals within Tarrant County that participate in the referral system include Cook's Children's Hospital, Fort Worth's Osteopathic Medical Center, and the Harris Methodist Medical System. The closest Veterans Administration (VA) hospital to the base is located in Dallas, approximately 40 miles east of Carswell AFB.

In addition to military health services offered through military hospitals, military personnel and dependents have access to the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), a co-payment medical plan. CHAMPUS provides payment for specific medical services to eligible dependents of active, retired, or deceased military personnel. As with many insurance plans, CHAMPUS pays approximately three-fourths of the cost of medical services. CHAMPUS is honored by hospitals, clinics, and doctors nationwide, including all the health care facilities mentioned in this report. However, because of the limitations and constraints to the coverage offered by CHAMPUS, retired military personnel are encouraged to supplement this health care plan with secondary coverage.

Prior to closure, the R.L. Thompson Strategic Hospital provided health care services to active duty military personnel and their dependents, retired military personnel and their dependents, and to dependents of deceased military personnel.

The hospital offered a number of medical specialties. The hospital also provided a pharmacy, sick day care unit, a dental clinic, and a 24-hour ambulance service. The hospital served as a regional facility for Dyess AFB in Texas and Barksdale AFB in Louisiana.

#### Closure Conditions

The R.L. Thompson Strategic Hospital is closed. Because there are so many civilian hospitals and clinics in the region, the demand generated by the retiree population represents such a small increase in admissions and revenues that the effect is perceived to be negligible (McBroom, 1992). In fact, given the low occupancy rates for most hospitals in Tarrant County, the effect on inpatient care could benefit some hospitals.

In consideration of the retiree population, a CHAMPUS Reform Initiative (CRI) is being presented to Congress. This initiative would promote a managed-care contract based in the Dallas/Fort Worth area that would be similar to one operating in New Orleans, Louisiana. This would resemble the civilian health insurance and standard CHAMPUS programs in design, which would reduce the costs incurred by the retiree patients.



Although veterans will not be able to use the base hospital, they will be able to continue to take advantage of the VA hospital in Dallas.

### **3.6 PUBLIC FINANCE**

The financial characteristics of the potentially affected local jurisdictions surrounding Carswell AFB are presented below. Recent trends are discussed and are followed by discussion of the effects associated with base closure and placement in caretaker status.

The analysis of public finance issues is based upon financial reports through FY 1991 of the jurisdictions that provide details on local revenues and expenditures and provide the basis of estimated per capita changes in net fund balances.

#### **3.6.1 Tarrant County**

##### **Recent Trends**

Services provided by Tarrant County are principally funded through general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$158,282,000 and \$183,202,000, respectively. The fund balance was \$31,100, or about 16 percent of operating expenditures (Table 3.6-1).

Of the total revenues collected by the county, the largest single share (54 percent of total FY 1991 revenue fund collections) was contributed by taxes, licenses, and permits. Over the period FY 1988 to FY 1991, revenues increased at an average annual rate of 3.0 percent from \$109.6 million to \$158.3 million (see Table 3.6-1).

The level of expenditures increased over the 4-year period from \$135.6 million to \$183.2 million, at an average annual rate of 10.5 percent. The principal expenditure function was public safety, at 26 percent of FY 1991 expenditures.

Assessed valuation in the county for 1992 was \$46.1 billion.

#### **3.6.2 City of Benbrook**

##### **Recent Trends**

Services provided by Benbrook are principally funded through the city's general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$6,639,114 and \$8,675,218, respectively. The fund balance was \$3,719,613, or about 41.7 percent of operating expenditures (Table 3.6-2).

**Table 3.6-1. Tarrant County, Texas, Combined Statement of Revenues, Expenditures, and Changes, All Governmental Fund Types, FY 1988-1991 (thousands of current year dollars)**

	1988	1989	1990	1991
<b>Revenues</b>				
Taxes, licenses, and permits	53,672	66,829	79,336	86,005
Fees	21,136	22,189	24,102	22,775
Intergovernmental	21,675	23,524	30,216	38,194
Investment income	4,724	8,936	4,923	5,763
Other	8,406	4,978	4,641	5,545
Total revenues	109,613	126,456	143,218	158,282
<b>Expenditures</b>				
General government	17,181	12,096	14,643	15,903
Buildings	3,013	3,252	3,888	5,517
Public safety	29,847	36,909	42,101	46,829
Legal	7,478	8,991	10,222	11,546
Financial administration	6,841	7,745	8,279	8,794
Transportation support	11,753	12,428	14,673	11,529
Judicial	13,938	16,094	17,749	19,031
Health and Welfare	13,093	14,200	18,540	19,357
Capital outlay	21,864	58,156	28,960	20,470
Debt service				
Principal payments	7,011	7,520	9,955	12,450
Interest and fiscal charges	3,619	8,422	7,735	11,776
Total expenditures	135,638	185,813	196,745	183,202
Excess of revenues over (under) expenditures	-26,025	-59,357	-33,527	-24,920
<b>Other Financing Sources (Uses)</b>				
Transfers in	2,149	1,925	6,643	1,330
Transfers out	-3,837	-2,022	-6,402	-1,104
Capital lease	55	-13,890	-1,526	-257
Installation purchase bond proceeds	60,000	15,690	46,450	10,900
Total other sources	58,367	1,703	45,165	10,869
Excess of revenues over expenditures	32,342	-57,654	11,638	-14,051
<b>Fund Balances (beginning)</b>	57,592	89,934	33,513	45,149
<b>Prior Period Correction</b>	--	1,233	-2	2
<b>Fund Balances (ending)</b>	89,934	33,513	45,149	31,100

FY = Fiscal year.

Sources: Tarrant County, 1988, 1989, 1990, 1991.

**Table 3.6-2. City of Benbrook, Texas, Combined Statement of Revenues, Expenditures, and Changes, All Governmental Fund Types, FY 1988-1991 (current year dollars)**

	1988	1989	1990	1991
<b>Revenues</b>				
Taxes	5,165,292	5,419,831	5,179,778	5,684,369
Licenses, permits and filing fees	87,926	115,953	96,196	78,942
Fines and forfeitures	94,384	111,653	125,775	98,963
Use of money and property	393,168	437,824	615,212	397,019
Charges for services	153,752	125,542	153,123	212,565
Special assessments	8,339	58,491	34,354	46,645
Other revenues	67,833	74,389	103,917	120,611
Total revenues	5,970,694	6,343,683	6,308,355	6,639,114
<b>Expenditures</b>				
Current				
General government	461,901	568,582	516,837	501,821
Staff services	142,375	151,848	423,182	456,200
Public safety	1,813,708	2,095,067	2,268,560	2,631,704
Public services	994,994	960,668	987,249	1,032,452
Community development	1,025,428	1,400,342	1,710,103	2,190,961
Capital outlay	314,325	116,596	677,133	120,025
Debt service	1,309,688	1,338,460	1,333,298	1,742,055
Total expenditures	6,062,419	6,631,563	7,916,362	8,675,218
Excess of revenues over expenditures	-91,725	-287,880	-1,608,007	-2,036,104
<b>Other Financing Sources (Uses)</b>				
Transfers in	478,686	442,288	3,836,187	171,734
Transfers out	-478,686	-442,288	-648,376	-171,734
Total other sources	--	--	3,187,811	--
Excess of revenues over expenditures	-91,725	-287,880	1,579,804	-2,036,104
<b>Fund Balances (beginning)</b>	4,555,518	4,463,793	4,175,913	5,755,717
<b>Fund Balances (ending)</b>	4,463,793	4,175,913	5,755,717	3,719,613

FY = Fiscal year.

Sources: City of Benbrook, 1988, 1989, 1990, 1991.

Of the total revenues collected, the largest single share (85.6 percent of total FY 1991 revenue fund collections) was contributed by taxes. Over the period FY 1988 to FY 1991, revenues increased at an average annual rate of 3.6 percent, from \$5.97 million to almost \$6.64 million.

The level of expenditures increased over the 4-year period from \$6.06 million to almost \$8.68 million at an average annual rate of 12.7 percent. The principal expenditure functions were public safety (30 percent of total FY 1991 expenditures) and community development (25.3 percent of total FY 1991 expenditures). Expenditures exceeded revenues in each year, increasing from \$91,725 in FY 1988 to \$2,036,104 in FY 1991.

Assessed valuation in the city for 1992 was \$669.1 million.

### **3.6.3 City of Fort Worth**

#### **Recent Trends**

Services provided by Fort Worth are principally funded through the city's general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$308,979,000 and \$349,292,000, respectively. The fund balance was \$132,780,000, or about 38 percent of operating expenditures (Table 3.6-3).

Of the total revenues collected, the largest single share (42 percent of total FY 1991 revenue fund collections) was contributed by property taxes. Over the period FY 1988 to FY 1991, revenues increased at an average annual rate of 4.2 percent from \$273 million to almost \$309 million.

The level of expenditures increased over the 4-year period from \$308,718,000 to \$349,292,000, at an average annual rate of 4.2 percent. The principal expenditure functions were public safety (26.2 percent of total FY 1991 expenditures) and capital outlay (15.7 percent of total FY 1991 expenditures). Expenditures exceeded revenues in each year, and increased from \$35,504,000 in FY 1988 to \$40,313,000 in FY 1991.

Assessed valuation in the city in 1992 was \$16.5 billion.

### **3.6.4 City of Lake Worth**

#### **Recent Trends**

Services provided by Lake Worth are principally funded through the city's general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$1,768,447 and \$2,152,338, respectively. The fund

**Table 3.6-3. City of Fort Worth, Texas, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances, All Governmental Fund Types, and Expendable Trust Funds, FY 1988-1991 (thousands of current year dollars)**

	1988	1989	1990	1991
<b>Revenues</b>				
General property taxes	118,195	129,079	135,474	131,240
Other local taxes	42,316	44,044	46,863	46,740
Assessments	1,758	1,090	1,415	1,627
Charges for services	12,716	14,054	12,766	11,314
Licenses and permits	19,336	19,674	20,424	22,571
Fines and forfeitures	4,720	4,382	5,126	4,258
Use of money and property	19,972	20,161	19,303	20,432
Intergovernmental	19,834	21,523	24,336	27,158
Other	665	759	1,528	1,975
Contributions	33,702	24,117	25,692	41,664
Total revenues	273,214	278,883	292,927	308,979
<b>Expenditures</b>				
Current				
General administration	39,316	35,978	41,610	48,259
Public safety	87,016	88,169	94,707	91,416
Transportation and public works	21,352	22,022	23,412	21,494
Park and recreation	10,851	12,503	14,042	13,416
Public library	6,040	7,406	7,686	7,336
Public health	6,699	6,897	7,891	7,749
Public events and facilities	5,190	5,509	5,486	6,043
Nondepartmental	6,987	10,343	11,673	14,590
Employment and training	7,652	9,043	8,534	13,068
Planning and development	3,788	3,774	3,802	4,497
Finance	2,690	2,917	2,962	2,733
Housing and human services	5,027	7,218	6,941	7,095
Capital outlay	52,853	37,466	46,658	54,918
Debt service				
Principal retirement	22,930	23,933	25,847	28,056
Interest and service charges	30,327	31,341	30,917	28,622
Total expenditures	308,718	304,519	332,168	349,292
Excess of revenues over expenditures	-35,504	-25,636	39,241	-40,313
<b>Other Financing Sources (Uses)</b>				
Proceeds from long-term debt	24,437	25,200	0	29,950
Transfers in	49,829	51,171	54,183	60,464
Transfers out	-48,520	-48,702	-53,291	-58,895
Total other sources	25,746	27,669	892	31,519
Excess of revenues over expenditures	-9,758	2,033	-38,349	-8,794
<b>Fund Balances (beginning)</b>	185,287	176,188	178,800	140,451
<b>Equity Transfer In</b>	659	579	0	1,123
<b>Fund Balances (ending)</b>	176,188	178,800	140,451	132,780

FY = Fiscal year.

Sources: City of Fort Worth, 1988, 1989, 1990, 1991.

balance was \$494,184, or about 23.0 percent of operating expenditures (Table 3.6-4).

Of the total revenues collected, the largest single share (76 percent of total FY 1991 revenue fund collections) was contributed by taxes. Over the period FY 1988 to FY 1991, revenue increased at an average annual rate of 3.6 percent from \$1.59 million to almost \$1.77 million.

The principal expenditure functions were public safety, comprised of the police and fire departments (40.5 percent of total FY 1991 expenditures), and general expense (24.2 percent of total FY 1991 expenditures). Expenditures exceeded revenues by \$383,891 in FY 1991.

Assessed valuation in the city in 1992 was \$138.6 million.

### **3.6.5 City of River Oaks**

#### **Recent Trends**

Services provided by River Oaks are principally funded through the city's general fund, and to a much smaller degree through special revenue funds. In FY 1992, revenues and expenditures for these funds were \$1,720,955 and \$1,803,629, respectively. The fund balances were \$1,711,218 for the general fund and \$162,183 for the special funds, or about 104 percent of operating expenditures (Table 3.6-5).

Of the total revenues collected, the largest single share (69 percent of total FY 1992 revenue fund collections) was contributed by taxes.

The principal expenditure functions were public safety, comprised of the police and fire departments (36.6 percent of the total FY 1992 expenditures), and general government expenses (24.5 percent of total FY 1992 expenditures). Expenditures exceeded revenues by \$82,674 in FY 1992.

Assessed valuation in the city in 1992 was \$135.4 million.

### **3.6.6 City of Sansom Park**

#### **Recent Trends**

Services provided by Sansom Park are principally funded through the city's general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$730,285 and \$682,923 respectively. The fund balance was \$56,140, or about 8.2 percent of the operating expenditures (Table 3.6-6).

**Table 3.6-4. City of Lake Worth, Texas, Combined Statement of Revenues, Expenditures, and Changes, All Government Fund Types, FY 1988-1991 (current year dollars)**

	1988	1989	1990	1991
<b>Revenues</b>				
Taxes	1,192,263	1,272,085	1,327,725	1,345,637
Licenses and permits	32,220	31,312	27,701	22,508
Charges for services	97,814	97,877	98,752	11,858
Fines and forfeitures	204,975	285,907	313,834	263,903
Miscellaneous revenues	63,494	73,343	99,067	124,541
Total revenues	1,590,766	1,760,524	1,867,079	1,768,447
<b>Expenditures</b>				
Current				
Mayor and Council	11,604	15,054	17,314	11,081
General expense	372,902	461,537	464,327	521,937
Police department	656,720	723,856	753,658	804,424
Fire department	26,995	45,530	51,704	66,773
Street department	149,744	137,112	184,772	189,135
Tax department	27,935	26,592	28,689	28,756
Sanitation department	69,165	73,683	78,928	81,062
Library	26,345	28,281	103,988	245,928
Recreation department	22,935	26,289	33,210	34,168
Maintenance department	14,908	14,995	13,800	17,639
Senior citizens program	22,556	25,188	22,430	21,098
Municipal court	30,461	32,061	34,553	39,710
Animal control	22,201	28,560	21,017	22,363
Fire marshall	1,033	2,311	--	--
Debt service				
Principal retirement	70,637	64,170	43,697	46,761
Interest and fiscal charges	10,048	3,723	1,363	21,503
Total expenditures	1,536,189	1,708,943	1,853,450	2,152,338
Excess of revenues over expenditures	54,577	51,582	-7,371	-383,891
<b>Other Financing Sources (Uses)</b>				
Loan proceeds				180,000
Transfers in	40,000	40,325	40,000	40,000
Transfers out	-20,000	-20,325	-20,000	-20,000
Total other sources	20,000	20,000	20,000	200,000
Excess of revenues over expenditures	75,577	71,582	33,629	-183,891
<b>Fund Balances (beginning)</b>	472,656	547,233	622,027	655,656
<b>Equity Transfer In</b>	--	3,212	--	22,419
<b>Fund Balances (ending)</b>	547,233	622,027	655,656	494,184

FY = Fiscal year.

Sources: City of Lake Worth, 1988, 1989, 1990, 1991.

**Table 3.6-5 City of River Oaks, Texas, Statement of Revenues, Expenditures, All Government Types, FY 1992 (current year dollars)**

	Governmental Fund Types	
	General	Special Revenue
<b>Revenues</b>		
Taxes	1,182,140	12,998
Licenses and permits	18,486	
Charges for services	260,925	
Fines and forfeits	124,134	
Miscellaneous revenues	115,315	6,957
<b>Total revenues</b>	<b>1,701,000</b>	<b>19,955</b>
<b>Expenditures</b>		
<b>Current</b>		
Legislative	10,107	
Legal	27,784	
Corporation court	9,928	
City administrator	45,196	
Tax assessor	109,910	
Zoning board	130	
Election	866	
Fire department	63,703	
Police department	597,216	
Garage department	18,133	
Street department	231,246	
Sanitation department	170,071	
General government	442,039	
Library	37,551	
Park department	5,072	
Council projects	34,677	
<b>Total expenditures</b>	<b>1,803,629</b>	
Excess of revenues over expenditures (expenditures over revenues)	-102,629	19,955
<b>Other Financing Sources (Uses)</b>		
Operating transfers in (out)	2,525	
Excess of revenues and other sources (Uses) over expenditures	-100,104	19,955
<b>Fund Balances - April 1</b>	<b>1,813,600</b>	<b>142,228</b>
<b>Decrease in Inventory</b>	<b>-2,278</b>	
<b>Fund Balances - March 31</b>	<b>1,711,218</b>	<b>162,183</b>

FY = Fiscal year.

Source: City of River Oaks, 1992.



**Table 3.6-6. City of Sansom Park, Texas, Statement of Revenues, Expenditures, and Changes, All Government Fund Types, FY 1988-1991<sup>(a)</sup> (current year dollars)**

	1988 <sup>(b)</sup>	1989 <sup>(b)</sup>	1990 <sup>(b)</sup>	1991
<b>Revenues</b>				
Taxes	373,924	406,798	436,393	461,707
Charges for services	139,390	154,517	158,857	154,234
Fines	128,354	104,143	87,496	87,505
Licenses and permits	17,413	17,241	19,179	14,646
Interest revenue	5,264	6,034	6,260	5,522
Miscellaneous income	24,417	2,600	2,200	6,671
Total revenues	688,762	691,333	710,385	730,285
<b>Expenditures</b>				
General government	109,659	116,426	157,321	90,340
Police department	334,948	368,065	339,383	346,811
Fire and rescue department	37,877	86,531	98,295	106,850
Municipal court	32,663	34,052	24,584	26,995
Street department	47,626	26,417	41,355	18,696
Sanitation	91,215	91,215	91,215	91,385
Community center	4,710	2,325	764	1,846
Total expenditures	658,698	725,031	752,917	682,923
Excess of revenues over (under) expenditures	30,064	-33,698	-42,532	47,362
<b>Other Financing Sources (Uses)</b>				
Operating transfer in (out)	--	--	--	1,841
Sales of general fixed assets	11,062	9,754	6,980	6,807
Total other financial sources	11,062	9,754	6,980	8,648
Excess of revenues and other sources over expenditures	41,126	-23,944	-35,552	56,010
<b>Fund Balances (beginning)</b>	18,500	59,626	35,682	130
<b>Fund Balances (ending)</b>	59,626	35,682	130	56,140

Notes: (a) The General Fund is the only governmental fund type maintained by the city.

(b) In years 1988, 1989, 1990 an Other Revenues heading was included under Revenues and comprised Interest Earnings, Sales of Surplus Property, Rents, and Other Income. To be consistent with 1991 data, Interest Earnings were included under Interest Revenues; Sales of Surplus Property were included under Sales of General Fixed Assets; and Rents and Other Income were included under Miscellaneous Income.

FY = Fiscal year.

Sources: City of Sansom Park, 1988, 1989, 1990, 1991.

Of the total revenues collected, the largest single share (63 percent of total FY 1991 revenue fund collections) was contributed by taxes. Over the period FY 1988 to FY 1991, revenue increased at an average annual rate of just under 2.0 percent from \$688,762 to \$730,285.

The level of expenditures increased from almost \$658,698 in FY 1988 to \$682,923 in FY 1991. The principal expenditure functions were police department (51 percent of total FY 1991 expenditures) and fire and rescue (15.6 percent of FY 1991 expenditures). Revenues exceeded expenditures in FY 1988 and FY 1991; expenditures exceeded revenues by almost \$33,698 in FY 1989 and \$42,532 in FY 1990.

Assessed valuation in the city in 1992 was \$63.0 million.

### **3.6.7 Town of Westover Hills**

#### **Recent Trends**

Services provided by Westover Hills are principally funded through the town's general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$969,726 and \$864,732, respectively. The fund balance was \$108,451, or 12.5 percent of the operating expenditures (Table 3.6-7).

Of the total revenues collected, the largest single share (86 percent of total FY 1991 revenue fund collections) was contributed by value-added taxes. Over the period FY 1988 to FY 1991, revenues increased at an average annual rate of 10.0 percent from \$729,243 to almost \$969,726.

The level of expenditures increased from almost \$783,000 in FY 1988 to \$865,000 in FY 1991. The principal expenditure functions were police (42 percent of total FY 1991 expenditures) and fire (11.1 percent of total FY 1991 expenditures). Expenditures exceeded revenues in FY 1988 and FY 1989. Revenues exceeded expenditures by \$8,700 in FY 1990 and \$105,000 in FY 1991.

Assessed valuation in the town in 1992 was \$168.3 million.

### **3.6.8 City of Westworth Village**

#### **Recent Trends**

Services provided by Westworth Village are principally funded through the city's general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$446,174 and \$567,418, respectively. The fund balance was \$536,935, or 94.6 percent of the operating expenditures (Table 3.6-8).

**Table 3.6-7. Town of Westover Hills, Texas, Combined Statement of Revenues, Expenditures, and Changes, All Government Fund Types, FY 1988-1991 (current year dollars)**

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	1988	1989	1990	1991
<b>Revenues</b>				
Ad valorem taxes	638,865	697,715	751,997	836,758
Ad valorem tax penalties	7,469	6,889	7,176	3,617
Gross receipts tax	46,143	46,778	49,025	54,328
Building permits	2,133	1,242	3,582	27,803
Miscellaneous	454	202	4,080	564
Interest earned	8,892	9,768	7,827	8,746
Garbage collection	24,382	24,168	36,448	37,810
Sale of assets	905	1,450	3,600	--
Donations	--	--	42,461	100
Total revenues	729,243	788,212	906,196	969,726
<b>Expenditures</b>				
General government				
Salaries	61,203	82,738	87,132	92,813
Employment insurance	38,964	45,299	54,336	59,054
Payroll taxes	31,773	31,080	33,627	33,491
Employee retirement	8,597	33,081	31,983	33,545
City Hall expenditures	12,967	9,176	3,166	3,793
Telephone & utilities	8,378	7,568	7,330	8,033
Office and printing	2,662	2,488	2,713	3,067
Park supplies and maintenance	1,100	935	1,617	1,786
Postage	1,066	1,351	1,371	1,448
Accounting and auditing	37,057	35,525	32,550	25,025
Legal fees	14,959	8,834	9,675	17,998
Insurance and bonds	55,743	65,260	67,080	68,397
Garbage permits/expenditures	10,561	13,928	11,411	15,914
Street repairs	796	786	571	15,866
Street electric service	6,291	6,341	6,528	7,279
Public works expenditures	5,284	3,520	4,747	4,084
Fire protection	96,201	96,014	103,880	96,183
Interest expenditures	36	131	202	419
Miscellaneous	12,435	1,613	2,703	1,242
Property tax collection	--	7,254	7,576	10,008
Ambulance service	--	--	--	2,723
Repairs - City Hall	--	--	42,063	--
Capital expenditures	11,825	--	24,768	325
Depreciation	5,660	4,459	4,315	146
Subtotal	423,558	457,381	541,364	502,639

FY = Fiscal year.

**Table 3.6-7. Town of Westover Hills, Texas, Combined Statement of Revenues, Expenditures, and Changes, All Government Fund Types, FY 1988-1991 (current year dollars)**

Page 2 of 2

	1988	1989	1990	1991
<b>Expenditures (continued)</b>				
Police department				
Salaries	320,636	316,436	329,715	336,005
Auto	2,294	3,313	3,048	3,000
Gasoline and oil	9,937	9,219	9,358	9,703
Repairs and other	12,473	12,641	13,927	13,385
Capital expenditures	14,074	--	--	--
Subtotal	359,414	341,609	356,048	362,093
Total expenditures	782,972	798,990	897,412	864,732
Expenditures in Excess of Revenue	-53,729	-10,778	8,764	104,994
<b>Other Financing Uses</b>				
Operating transfers to enterprise fund	--	--	--	119,486
Property tax lawsuit	--	--	--	37,117
Total financing uses	--	--	--	156,603
Excess of revenues over expenditures and other financial uses	--	--	--	-51,609
Fund Balance (beginning)	215,427	162,054	151,276	160,060
Increases in Fund Balance	356	--	--	--
Fund Balance (ending)	162,054	151,276	160,060	108,451

FY = Fiscal year.

Sources: Town of Westover Hills, 1988, 1989, 1990, 1991.

Of the total revenues collected, the largest single share (42 percent of total FY 1991 revenue fund collections) was contributed by taxes. Revenues declined at an average annual rate of 6.7 percent from \$549,419 to \$446,174.

The level of expenditures fluctuated over the FY 1988 to FY 1991 period, between \$567,410 and \$453,999. The principal expenditure functions were police (37.8 percent of total FY 1991 expenditures) and reduction of long-term debt (19.1 percent of total FY 1991 expenditures). Expenditures exceeded revenues in FY 1990 and FY 1991. The combined funds balance was relatively stable through the period FY 1988 to FY 1990 at over \$651,479 and dropped to \$536,935 in FY 1991. In all but FY 1991, the fund balance exceeded the level of total expenditures.

**Table 3.6-8. City of Westworth Village, Texas, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances (Deficit), All Governmental Fund Types, and Expendable Trust Funds, FY 1988-1991 (current year dollars)**

	1988	1989	1990	1991
<b>Revenues</b>				
Franchise taxes	138,030	149,736	144,559	162,233
Sales taxes	19,913	16,437	20,360	20,208
Liquor taxes	2,258	5,763	4,453	5,546
Interest income	51,294	47,317	40,930	29,325
Licenses and permits	4,816	5,943	7,823	7,021
Fines and forfeitures	144,623	153,479	155,626	148,130
Proceeds from long-term debt	105,000	--	--	--
Other revenues	22,485	9,428	20,420	18,711
Federal allocations	61,000	65,000	68,000	55,000
Total revenues	549,419	453,103	462,171	446,174
<b>Expenditures</b>				
Current				
General government	92,884	86,925	84,709	85,428
Police	175,045	193,137	203,001	214,414
Maintenance	23,896	3,758	4,322	5,973
Corporation court	27,476	32,791	42,227	44,875
Fire	21,867	15,019	13,841	13,836
Capital outlay	128,516	98,993	90,385	93,914
Debt service				
Reduction of long-term debt	39,349	12,410	14,669	108,572
Interest and service charges	13,601	10,966	10,103	2,402
Total expenditures	522,634	453,999	463,257	567,418
<b>Other Financing Sources</b>				
Interfund transfers in	140,000	23,376	24,772	122,717
Interfund transfers out	-140,000	-23,376	-24,772	-122,717
Statutory transfers	--	15,791	--	--
Total other sources	0	15,791	0	0
Excess of revenues over expenditures	26,785	14,895	-1,086	-121,244
<b>Fund Balances (beginning)</b>	624,694	644,370 <sup>(a)</sup>	659,265	658,179
<b>Fund Balances (ending)</b>	651,479	659,265	658,179	536,935

Note: (a) The fund balances for FY 1988 and FY 1989 are provided as reported by Westworth Village.  
FY = Fiscal year.

Sources: City of Westworth Village, 1988, 1989, 1990, 1991.

Westworth Village has not assessed property because the franchise taxes collected from Carswell AFB have generated sufficient revenues for the city.

### **3.6.9 City of White Settlement**

#### **Recent Trends**

Services provided by White Settlement are principally funded through the city's general and special revenue funds. In FY 1991, revenues and expenditures of these funds were \$4,585,763 and \$5,580,350, respectively. The fund balance was \$518,652, or 9.3 percent of the operating expenditures (Table 3.6-9).

Of the total revenues collected, the largest single share (77 percent of total FY 1991 revenue fund collections) was contributed by taxes. Over the period FY 1988 to FY 1991, revenue increased at an average annual rate of 1.2 percent from \$4.42 million to almost \$4.59 million.

The level of expenditures fluctuated over the 4-year period, between \$6.37 million and \$4.94 million. The principal expenditure functions were public safety (31.0 percent of the total FY 1991 expenditure), and public works (19.4 percent of the total FY 1991 expenditures). Expenditures exceeded revenues in each year, but decreased from \$1,944,269 in FY 1988 to about \$994,587 in FY 1991.

Assessed valuation in the city in 1992 was \$345.1 million.

### **3.6.10 Castleberry Independent School District**

Services provided by the Castleberry ISD are principally funded through the district's general and special funds. In FY 1990-1991, revenues and expenditures of these funds were \$7,951,164 and \$8,135,480, respectively. Fund balances were \$1,145,853, or 14.1 percent of operating expenditures for this year (Table 3.6-10). This was lower than FY 1989-1990 when fund balances were \$1,322,536, or 18.0 percent of operating expenditures.

Funding from local sources (31 percent of FY 1990-1991 general and special revenue fund collections) amounted to \$2,524,295. State sources, totaling \$5,198,484, contributed 65.3 percent of revenues collected in FY 1990-1991. The principal expenditure was for instruction (\$4,699,073, or 57.8 percent of total FY 1990-1991 expenditures).

### **3.6.11 Fort Worth Independent School District**

Services provided by the Fort Worth ISD are principally funded through the district's general and special revenue funds. In FY 1990-1991, revenues

**Table 3.6-9. City of White Settlement, Texas, Combined Statement of Revenues, Expenditures, and Changes, All Governmental Fund Types, FY 1988-1991 (current dollars)**

	1988	1989	1990	1991
<b>Revenues</b>				
Taxes	2,969,647	3,068,986	3,476,681	3,527,791
Licenses and permits	46,134	38,851	47,326	44,011
Charges for services	774,347	642,514	689,483	720,074
Fines and forfeits	247,004	188,875	173,722	162,268
Special assessments	139,544	27,716	24,321	28,467
Interest	202,201	193,193	182,372	66,987
Miscellaneous	43,512	46,176	25,276	36,165
Total Revenues	4,422,389	4,206,311	4,619,181	4,585,763
<b>Expenditures:</b>				
Current				
General government	524,654	600,241	594,276	628,863
Public safety	1,337,755	1,376,248	1,661,615	1,720,838
Public works	1,065,167	1,158,807	1,063,916	1,083,026
Public health	34,055	51,966	35,996	47,125
Culture and recreation	766,420	879,965	830,103	855,808
Capital outlay	2,250,173	259,621	1,362,278	598,429
Debt service				
Redemption of bonds/notes	180,000	190,000	185,000	240,000
Interest	207,108	420,056	430,419	404,185
Fiscal agent charges	1,326	1,710	2,172	2,076
Total Expenditures	6,366,658	4,938,614	6,165,775	5,580,350
Excess Of Revenues over (under) Expenditures	-1,944,269	-732,303	-1,546,594	-994,587
<b>Other Financing Sources (Uses)</b>				
Proceeds of General Obligation bonds/financing obligations	1,925,314	1,000,000	150,000	--
Transfers In	1,085,000	512,334	389,417	385,800
Transfers out	-1,123,708	-212,334	-89,417	-49,800
Total Other Sources	1,886,606	1,300,000	450,000	336,000
Excess of Revenues over Expenditures	-57,663	567,697	-1,096,594	-658,587
<b>Fund Balances (beginning)</b>	1,763,799	1,706,136	2,273,833	1,177,239
<b>Fund Balances (ending)</b>	1,706,136	2,273,833	1,177,239	518,652

FY = Fiscal year.

Sources: City of White Settlement, 1988, 1989, 1990, 1991.

**Table 3.6-10. Castleberry Independent School District Revenues, Expenditures, and Fund Balances, General Fund, FY 1988-1991 (current year dollars)**

	1988-1989	1989-1990	1990-1991 <sup>(a)</sup>	1991-1992
<b>Revenues</b>				
Local, intermediate, and out-of-state	2,287,337	2,351,740	2,524,295	3,156,226
State program revenues	4,493,413	4,668,496	5,198,484	6,140,199
Federal program revenues	151,170	180,648	228,385	298,199
Total revenues	6,931,920	7,200,884	7,951,164	9,594,624
<b>Expenditures</b>				
Instruction	3,940,621	4,152,560	4,699,073	5,085,562
Instructional computing	68,282	110,906	115,186	360,063
Instructional administration	140,813	163,463	169,843	212,766
Instructional resources and media services	100,195	98,767	118,832	126,628
School administration	438,494	473,382	545,142	613,228
Curriculum and personnel development	--	--	595	--
Guidance and counseling services	172,144	191,594	207,781	243,168
Attendance and social work services	25,788	30,087	32,495	40,651
Health services	32,755	34,849	37,513	48,664
Pupil transportation	50,256	108,782	49,369	73,365
Co-curricular activities	324,013	343,715	364,716	381,810
Food services	545,079	531,643	594,496	664,421
General administration	347,954	372,013	388,735	417,359
Debt services	890	15,658	21,438	21,598
Plant maintenance and operation	635,565	740,067	764,847	1,068,857
Facilities acquisition and construction	--	--	25,419	260,361
Total expenditures	6,822,849	7,367,486	8,135,480	9,618,501
<b>Other Resources and Uses</b>				
Other resources	2,826	67,557	7,633	22,000
Other uses	--	--	--	-18,773
Total other resources and uses	2,826	67,557	7,633	3,227
Excess of revenues and other resources over expenditures and other uses	111,897	-99,045	-176,683	-20,650
<b>Fund Balance (beginning)</b>	1,304,383	1,416,042	1,322,536	1,145,853
<b>Increase (Decrease) in Fund Balance</b>	-238	5,539	--	--
<b>Fund Balance (ending)</b>	1,416,042	1,322,536	1,145,853	1,125,203

Note: (a) FY 1990-1991 represents preclosure year.  
FY = Fiscal year.

Source: Winn, 1992.



and expenditures of these funds were \$235,821,197 and \$240,432,286, respectively. Fund balances were \$17,905,743, or 7.4 percent of operating expenditures for this year (Table 3.6-11). This was higher than FY 1989-1990 when fund balances were \$17,709,542, or 8.1 percent of operating expenditures.

Funding from local sources (56.0 percent of FY 1990-1991 general and special revenue fund collections) amounted to \$132,514,821. State sources, totaling \$102,380,325, contributed 43.0 percent of revenues collected in FY 1990-1991. The principal expenditure was for instruction (\$136,088,638, or 57 percent of total FY 1990-1991 expenditures).

#### **3.6.12 Lake Worth Independent School District**

Services provided by the Lake Worth ISD are principally funded through the district's general and special revenue funds. In FY 1989-1990, revenues and expenditures of these funds were \$4,267,263 and \$4,825,355, respectively. The district had \$558,092 in expenditures over revenues for this year (Table 3.6-12).

Funding from local sources (50.1 percent of FY 1989-1990 general and special revenue fund collections) amounted to \$2,140,822. State sources, totaling \$2,121,616, contributed 49.7 percent of revenues collected in FY 1989-1990.

The principal expenditure was for instruction (\$2,165,442 or 44.9 percent of total FY 1989-1990 expenditures).

#### **3.6.13 White Settlement Independent School District**

Services provided by the White Settlement ISD are funded principally through the district's general and special revenue funds. In FY 1990, revenues and expenditures of these funds were \$11,705,246 and \$11,124,274, respectively. Fund balances were \$2,311,670, or 21.0 percent of operating expenditures for this year (Table 3.6-13). This was higher than FY 1990, when fund balances were \$1,568,630, or 15.4 percent of operating expenditures.

Funding from local sources (52.4 percent of FY 1990 general and special revenue fund collections) amounted to \$6,129,394. State sources, totaling \$5,208,613, contributed 44.5 percent of revenues collected in FY 1990. The principal expenditure was for instruction (\$6,546,492 or 58.8 percent of total FY 1990 expenditures).

**Table 3.6-11. Fort Worth Independent School District Revenues, Expenditures, and Fund Balances, General Fund, FY 1988-1991 (current year dollars)**

Page 1 of 2

	1988-1989	1989-1990	1990-1991	1991-1992
<b>Revenues</b>				
Local sources				142,857,474
Property taxes	102,412,647	112,293,704	124,357,194	
Interest	2,924,052	3,345,627	2,765,195	
Other	7,433,878	8,447,480	5,392,432	
State sources				128,623,287
Per capita and foundation	88,564,298	92,734,010	101,740,994	
Other	140,825	586,206	639,331	
Federal sources				920,000
Received direct from federal agencies	1,260,053	898,657	447,398	
Received through state agencies	201,121	183,956	394,726	
Other	21,212	104,274	83,927	
Total revenues	202,958,086	218,593,914	235,821,197	272,420,761
<b>Expenditures</b>				
Current				
Instruction	119,908,626	127,071,712	136,088,638	
Instructional-related services				
Administration	18,107,407	19,406,657	20,936,520	
Curriculum and instructional resources	5,212,785	5,894,691	7,266,941	
Pupil services				
Transportation	6,673,642	7,666,127	12,900,199	
Counseling and health	10,237,981	11,910,891	12,638,431	
Co-curricular activities	2,283,276	3,055,642	4,099,442	
General administration	10,502,837	10,467,675	10,236,112	
Plant maintenance and operations	31,985,927	30,638,041	33,748,785	
Facilities acquisition and construction				
Debt service payments				
Principal		1,849,391	2,225,415	
Interest		518,920	291,803	
Total expenditures	204,912,481	218,479,747	240,432,286	274,947,870
<b>Other Resources and Uses</b>				
Other resources	4,272,912	755,067	4,807,290	--
Other uses	--	--	--	--
Total other resources and uses	4,272,912	755,067	4,807,290	--

Note: Revenue and expenditure categories for 1991-1992 are taken from the 1991-1992 official budget and differ from prior years financial statement categories. The financial statement for FY 1991-1992 is not yet available.

FY = Fiscal year.

**Table 3.6-11. Fort Worth Independent School District Revenues, Expenditures, and Fund Balances, General Fund, FY 1988-1991 (current year dollars)**

Page 2 of 2

	1988-1989	1989-1990	1990-1991	1991-1992
Excess of revenues and other resources over expenditures and other uses	2,318,517	869,234	196,201	-2,527,109
Fund Balance (beginning)	14,521,791	16,840,308	17,709,542	17,905,743
Increase (Decrease) in Fund Balance	2,318,517	869,234	196,201	-2,527,109
Fund Balance (ending)	16,840,308	17,709,542	17,905,743	15,378,634

Note: Revenue and expenditure categories for 1991-1992 are taken from the 1991-1992 official budget and differ from prior years financial statement categories. The financial statement for FY 1991-1992 is not yet available.  
FY = Fiscal year.

Source: Fort Worth Independent School District, 1989.

**Table 3.6-12. Lake Worth Independent School District Uncut Budget (1989-1990), Proposed Expenditures, and Estimated Revenues (current year dollars)**

	FY 1989-1990
<b>Revenues</b>	
Local	\$2,140,822
State	2,121,616
Federal	4,825
<b>Total revenues</b>	<b>4,267,263</b>
<b>Expenditures</b>	
English as a second language	4,706
Compensatory education	124,758
Talented program	4,188
Vocational	80,942
Special education	250,695
Instruction	2,165,442
Library	97,615
Campus administration	269,452
Counselors	62,545
Nurse	17,540
Transportation	75,353
Athletics/band	119,487
Other	283,413
Maintenance	568,094
Utilities	155,270
Interest expenses	60,050
Debt service	486,500
<b>Total expenditures</b>	<b>4,825,355</b>

FY = Fiscal year.  
Source: Pitts, 1992.

**Table 3.6-13. White Settlement Independent School District Revenues, Expenditures, and Fund Balances, General Fund, FY 1988-1991 (current year dollars)**

	1988	1989	1990	1991
<b>Revenues</b>				
Local, intermediate, and out-of-state	4,509,259	4,919,582	6,129,394	6,492,943
State program revenues	5,232,858	4,968,785	5,208,613	5,806,294
Federal program revenues	323,613	293,250	367,239	436,895
<b>Total revenues</b>	<b>10,065,730</b>	<b>10,181,617</b>	<b>11,705,246</b>	<b>12,736,132</b>
<b>Expenditures</b>				
Instruction	5,481,091	6,012,900	6,548,492	7,346,837
Instructional computing	50,410	52,344	66,472	67,320
Instructional administration	238,076	192,694	165,939	190,870
Instructional resources and media services	150,824	142,794	150,833	141,091
School administration	557,579	585,081	669,843	696,814
Curriculum and personnel development	--	--	349	18,510
Guidance and counseling services	165,942	189,266	207,747	217,783
Attendance and social work services	58,945	59,947	74,488	95,040
Pupil transportation	213,164	172,270	221,071	463,510
Co-curricular activities	309,443	284,798	278,017	284,042
Food services	669,010	584,781	656,292	722,536
General administration	641,044	578,681	605,281	590,877
Debt services	--	--	--	--
Plant maintenance and operation	1,344,747	1,200,207	1,380,816	1,657,608
Facilities acquisition and construction	397,996	153,330	96,034	220,016
Computer processing	--	7,543	4,600	292,102
Data processing services	--	--	--	115,234
<b>Total expenditures</b>	<b>10,278,271</b>	<b>10,216,636</b>	<b>11,124,274</b>	<b>13,120,190</b>
<b>Other Resources and Uses</b>				
Other resources	34,128	7,780	162,068	506,100
Other uses	-1,199	--	--	-53,229
<b>Total other resources and uses</b>	<b>32,929</b>	<b>7,780</b>	<b>162,068</b>	<b>452,871</b>
Excess of revenues and other resources over expenditures and other uses	-179,612	-27,239	743,040	68,813
<b>Fund Balance (beginning)</b>	<b>1,774,282</b>	<b>1,594,670</b>	<b>1,568,630</b>	<b>2,311,670</b>
<b>Increase in Fund Balance</b>	<b>--</b>	<b>1,199</b>	<b>--</b>	<b>--</b>
<b>Fund Balance (ending)</b>	<b>1,594,670</b>	<b>1,568,630</b>	<b>2,311,670</b>	<b>2,380,483</b>

FY = Fiscal year.

Source: Winn, 1992.

### Closure Conditions

From 1991 through closure of Carswell AFB in September 1993, Tarrant County was projected to lose 13,297 residents resulting in a reduction in revenues of almost \$1,656,936 (in 1989 dollars). It was anticipated that expenditures could be reduced due to the reduction in resident population by just over \$1,043,256, resulting in a net deficit to the community of \$613,680.

Over the period 1991 to closure of Carswell AFB, Benbrook was projected to lose 612 residents resulting in a reduction in revenues of almost \$164,628. It was anticipated that expenditures could be reduced by \$124,236, resulting in a net deficit to the community of \$40,392.

Over the period from 1991 to closure of Carswell AFB, Fort Worth was projected to lose 8,910 residents resulting in a reduction in revenues of about \$5,057,136. It was anticipated that expenditures could be reduced by approximately \$4,199,664, resulting in a net deficit to the community of \$857,472.

Over the period 1991 to closure of Carswell AFB, Lake Worth was projected to lose 27 residents, resulting in a reduction in revenues of almost \$9,855. It is anticipated that expenditures could be reduced by \$8,505, which would result in a deficit to the community of \$1,350.

Over the period 1991 to closure of Carswell AFB, River Oaks was projected to lose 312 residents, resulting in a reduction in revenues of \$71,392. It was anticipated that expenditures could be reduced by \$66,512, resulting in a net deficit to the city of \$4,880.

Over the period 1991 to closure of Carswell AFB, Sansom Park was projected to lose 146 residents, resulting in a reduction in revenues of \$24,820. It was anticipated that expenditures could be reduced by \$20,878, however, resulting in a net benefit to the community of \$3,942.

Over the period 1991 to closure of Carswell AFB, Westover Hills was projected to lose 13 residents, resulting in a reduction in revenue of \$15,548. It was anticipated that expenditures could be reduced by \$13,052, resulting in a net deficit to the community of \$2,496.

Over the period 1991 to closure of Carswell AFB, Westworth Village was projected to lose 825 residents, resulting in a reduction in revenues of almost \$233,820. It was anticipated that expenditures could be reduced by \$211,304, resulting in a net deficit to the community of \$22,516.

Over the period 1991 to closure of Carswell AFB, White Settlement was projected to lose 586 residents, resulting in a reduction in revenues of

\$239,141. It was anticipated that expenditures could also be reduced by approximately \$237,363, resulting in a net deficit to the community of \$1,778.

The net fiscal effect of closure of Carswell AFB on potentially affected school districts was projected at a potential net loss of approximately \$107,359 for the Castleberry ISD and a net loss of \$1,947,500 for the Fort Worth ISD. For the Lake Worth ISD, the net loss was \$196,238, and for the White Settlement ISD the net loss was \$576,334 (Table 3.6-14). This assumed losses of Federal Impact Aid (P.L. 81-874 funds) and losses of state revenue sources in proportion to the number of site-related students to total enrollment and reductions in expenditures for categories of instruction and instructional resources (i.e., expenditures in other categories remain the same). The losses of Federal Impact Aid were \$5,000 for the Castleberry ISD, \$470,000 for the Fort Worth ISD, \$4,500 for the Lake Worth ISD, and \$55,000 for the White Settlement ISD. State revenue per student was approximately \$2,146 in the Castleberry ISD, \$1,500 per student in the Fort Worth ISD, \$1,438 in the Lake Worth ISD, and \$1,394 in the White Settlement ISD. Changes in the property tax base from reassessment could produce additional fiscal changes, if local school revenue sources change.

**Table 3.6-14. Net Fiscal Effects of Closure of Carswell AFB on Potentially Affected Local Government Units, FY 1992 to Closure**  
(thousands of 1989 dollars)

Jurisdiction	1992	1993 <sup>(a)</sup>	Closure <sup>(b)</sup>
Tarrant County	-199,692	-460,506	-613,680
City of Benbrook	-13,143	-30,310	-40,392
City of Fort Worth	-279,021	-643,447	-857,472
City of Lake Worth	-439	-1,013	-1,350
City of River Oaks	-1,423	-3,785	-4,880
City of Sansom Park	-1,283	-2,958	-3,942
City of Westover Hills	-812	-1,873	-2,496
Westworth Village	-7,327	-16,896	-22,516
City of White Settlement	-579	-1,335	-1,778
Castleberry ISD	-41,629	-98,595	-107,359
Fort Worth ISD	0	-1,572,350	-1,947,500
Lake Worth ISD	-65,912	-152,796	-196,238
White Settlement ISD	-197,516	-453,992	-576,334

Notes: Effects are cumulative.

(a) 1993 represents the period from January 1, 1993, to September 30, 1993 (date of closure).

(b) Closure began October 1, 1993.

FY = Fiscal year.

## 3.7 TRANSPORTATION

### 3.7.1 Roadways

This section summarizes the preclosure and closure conditions of transportation systems on Carswell AFB and the ROI. A more detailed discussion of transportation is presented in Section 3.2.3 of the Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas. A discussion of the methodology and level of service (LOS) definitions are provided in Appendix B.

#### Recent Trends

The Dallas/Fort Worth area, including the area surrounding Carswell AFB, is a major hub for several interstate highways. Interstate 30, south of the base, provides direct access to the Fort Worth and Dallas central business districts, as well as to several smaller cities in between. Interstate 30 terminates west of the base, where it joins Interstate 20 and connects the region to points in West Texas, New Mexico, Louisiana, and southern Mississippi. To the northeast, Interstate 35W continues into Oklahoma and Kansas and connects the region with Austin and San Antonio to the south.

Fort Worth's beltway, Interstate 820, bounds the base on the west and north and connects all the interstate highways in the region. The roadway operates at LOS B between Interstate 30 and Lake Worth. Interchanges on Interstate 30 in the vicinity of the base are all well constructed and are designed to carry large volumes of traffic, either through the use of an extensive frontage road system or fully directional ramps. According to the 1992 Transportation Improvement Program (TIP) for the Dallas/Fort Worth area, Interstate 30, between SH 183 and Interstate 820, is to be widened from four lanes to six lanes by 1997.

In addition to the interstates, two major regional arterials serve the Carswell area. These are four-lane, median-divided, non-access controlled facilities with signalized intersections at major cross streets. The first is SH 183 (known locally as Alta Mere Drive), Westworth Boulevard, and River Oaks Boulevard. Between Interstate 30 and Roaring Springs Road, a distance of about 1.7 miles, there are four signalized intersections. Three of these are associated with the Ridgmar Mall entrances. All four intersections have exclusive turn lanes and phasing to accommodate left turns. The three signals around Ridgmar Mall experience periods of delay during the afternoon peak hour.

Mobility 2010, a long-range plan for the region, that was designed to "red flag" arterials that may experience congestion problems in the future, anticipates that SH 183 will require an upgrade to a "strategic regional

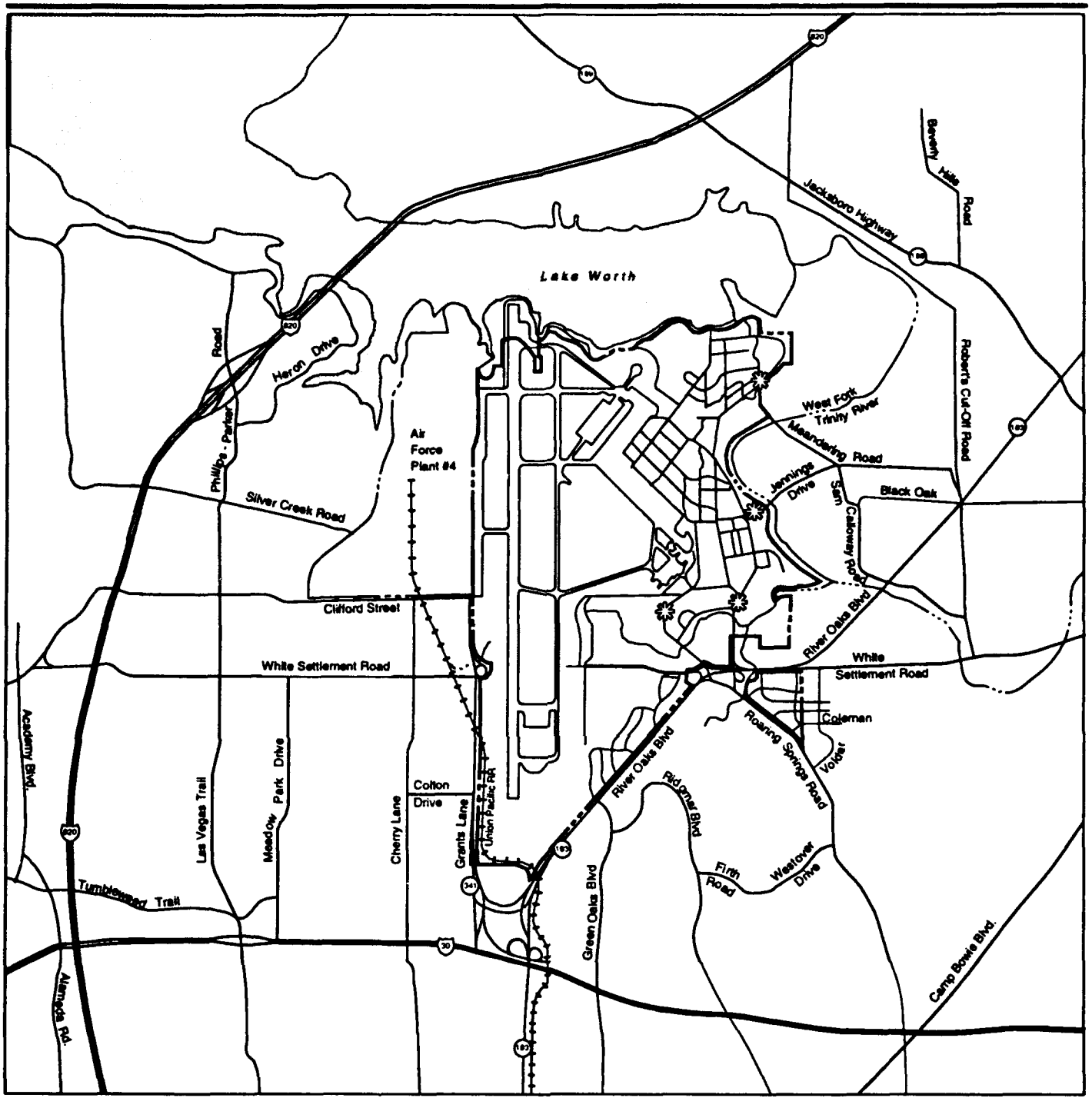
arterial". Mobility 2010 upgrades to SH 183 are not included in regional capital improvement plans.

The second regional arterial is SH 199, locally known as Jacksboro Highway. This roadway links SH 183 to Interstate 820 and provides access from the base to locations north of the area. SH 199, between SH 121 and Interstate 820, is to be upgraded to freeway standards in 1996.

Figure 3.7-1 depicts the road network in the immediate vicinity of Carswell AFB. Access to the base can be made through the Main Gate or three other gates. The Main Gate is located on Rogner Drive, which intersects with SH 183. The three other gates are located on extensions of local roadways (Roaring Springs Road, Meandering Road, and Jennings Drive). The local roads of concern around Carswell AFB include the following six roads:

- Roaring Springs Road connects with SH 183 and Pumphrey Drive (which turns into Rogner Drive at the base's Main Gate) to the north and with the frontage road system for Interstate 30 to the south. This two-lane, undivided road passes through the residential areas of Westworth Village and Westover Hills.
- Meandering Road connects SH 183 and the East and Hospital Gates and passes through the residential area of River Oaks. It is four lanes between SH 183 and Jennings Drive (Carswell Access Road). Between Jennings Drive and the Hospital Gate, it becomes two lanes.
- Jennings Drive provides access to the base via the East Gate. It connects the city of River Oaks to the base and extends to SH 183.
- Spur 341 provides direct access to AF Plant #4 from Interstate 30, in that it is directly linked to the interchange or frontage road system. Spur 341 has several at-grade intersections (none signalized) with local streets in White Settlement, and a partial interchange with White Settlement Road. Its six-lane, median-divided design provides for high operating speeds and high capacity.
- White Settlement Road, west of the base, runs east-west through the city of White Settlement. It has a partial interchange at its eastern terminus with Spur 341 before continuing east of the Carswell AFB runway; 2 miles west of Spur 341 is an interchange with Interstate 820. Within the city, White Settlement Road consists of four, undivided lanes on the eastern and western ends with a two-lane section in between. Three signalized intersections exist within the city of White Settlement, none of which appear to experience any significant delay.





#### EXPLANATION

- State Highways
- Interstate Highways
- Carswell AFB Boundary
- Base Gate
- Air Force Plant #4 Boundary

#### Local Transportation System



Figure 3.7-1

- West of Interstate 820, White Settlement Road is four lanes until the intersection with Chapel Creek Road, where it tapers to two lanes. A few miles beyond that intersection is the entrance to the Off-Site WSA. White Settlement Road, between Chapel Creek Road and Fort Worth city limits, is planned to be widened to four lanes by the year 2010.
- Clifford Street, west of the base, runs parallel to White Settlement Road through the city of White Settlement. This four-lane road connects with the northern terminus of Spur 341 to the east, crosses under Interstate 820 and connects with White Settlement Road to the west. Four signalized intersections exist, none of which appear to experience significant delays. As of 1992, Clifford Street, between Interstate 820 and Spur 341, was upgraded to four, undivided lanes by the Texas Department of Transportation.

When it was active, access to the base was through one of four gates. The Main Gate is located on Rogner Drive just north of its interchange with SH 183. The East Gate is located on Jennings Drive. The Hospital Gate is located on Meandering Road. The Southwest Gate is located on Haile Drive (an extension of Roaring Springs Drive).

The primary road on base is Rogner Drive. It is four lanes, undivided, and has signalized intersections at Jennings Drive (near East Gate) and Knights Lake Road. The Rogner/Jennings intersection has left-turn lanes and channelized right turns on the Jennings Drive approaches. Because of the skewed alignment of the Rogner/Knights Lake intersection, left turns onto Knights Lake Road from the northern Rogner Drive approach are prohibited.

Knights Lake Road connects to Rogner Drive near the Main Gate and, along with Rogner Drive, provides internal north-south circulation on the base, as well as linking most of the base buildings with the hospital.

Meandering Road provides access via the Hospital Gate and circulation around the northern boundary of the base. It extends off base into the city of River Oaks and connects with SH 183.

For the purposes of this analysis, 12 off-base roadway segments were identified as key local roads. These road segments would be affected by the various reuse plans. Preclosure (1991) and closure (1993) traffic levels on key roads in the vicinity are summarized in Table 3.7-1. The table shows hourly capacity, peak hour traffic volumes, and the corresponding LOS.

#### Closure Conditions

At closure of Carswell AFB, the Main Gate was the only access point to the base. Carswell AFB was expected to generate a total of 1,100 daily trips and a peak hour volume of 350 vehicles at the Main Gate, of which less than 50 vehicles were expected to be associated with the OL.

**Table 3.7-1. Peak-Hour Traffic Volumes and LOS on Key Roads**

Road	Capacity (VPH)	Preclosure (1991)		Closure (1993)	
		Traffic (PHV)	LOS	Traffic (PHV)	LOS
Regional					
I-30					
Between SH 183 and I-820	3,650	2,900	D	2,750	C
Between Camp Bowie Boulevard and SH 183	5,550	3,150	C	3,100	C
I-820					
Between I-30 and White Settlement Road	5,600	2,450	B	2,450	B
Between White Settlement Road and Lake Worth	5,600	2,330	B	2,350	B
SH 183					
Between I-30 and Ridgmar Boulevard	3,400	1,600	B	700	A
Between Ridgmar Boulevard and SH 199	3,200	1,200	B	1,050	A
SH 199					
Between SH 183 and Beverly Hills Road	3,200	1,450	B	1,250	B
Spur 341					
Between I-30 and White Settlement Road	5,100	2,150	B	2,000	B
Local					
White Settlement Road					
Between I-820 and Spur 341	2,750	1,050	B	1,000	B
Between Clifford Street and Academy Boulevard	3,100	650	B	600	B
Clifford Street					
Between I-820 and White Settlement Road	2,600	550	B	550	B
Roaring Springs Road					
Between SH 183 and I-30	2,300	1,000	D	950	D
On-base					
Rogner Drive, at Main Gate	2,600	1,150	B	350	B
Jennings Drive, at East Gate	2,100	350	C	0	NA
Meandering Road, at Hospital Gate	2,100	400	C	0	NA

I = Interstate.  
 LOS = Level of Service.  
 NA = Not applicable.  
 SH = State Highway.

Off-base traffic volumes were expected to drop on SH 183 in the Ridgmar Mall area. As a result, the LOS on SH 183 was expected to improve from B to A, except for the intersection with Ridgmar Boulevard, which was expected to operate at LOS B. Interstate 30, between SH 183 and Interstate 820, was expected to improve operation to LOS C. As would be expected, LOSs on roadways immediately adjacent to the base gates are also expected to improve.

### **3.7.2 Air Transportation**

#### **Recent Trends**

Air transportation includes passenger travel by commercial airline and charter flights; business and recreational travel by private (general) aviation; and priority package and freight delivery by commercial and air carriers.

There are two commercial service airports within Carswell AFB's ROI: DFW and DAL. DFW is approximately 21 statute miles from Carswell AFB and DAL is approximately 30 statute miles from Carswell AFB. Together, these two airports represent one of the largest FAA traffic hubs in the United States. In 1990, DFW and DAL recorded approximately 24,257,000 and 2,879,000 enplanements, respectively. In 1990, DFW recorded 132,914,000 enplaned pounds of freight and mail. DAL did not record any enplaned cargo in 1990.

General aviation activity in the ROI is substantial as the DFW Metroplex is one of the busiest regions for general aviation in the United States. As a result, a significant level of passenger activity occurs at general aviation airports in the ROI. These general aviation passenger levels are not typically recorded by the operators, so specific annual totals are not available.

#### **Closure Conditions**

The closure of Carswell AFB had a minimal effect on scheduled air transportation in Carswell AFB's ROI. Persons traveling to Carswell AFB would typically utilize scheduled military transportation or scheduled commercial airlines; therefore, general aviation operations and related passenger activity were minimally affected by closure. Because the proportion of DFW and DAL enplanements attributable to Carswell AFB was small, the loss of these enplanements by closure were estimated to result in the loss of less than one enplanement per departure at these airports. Therefore, operations at DFW and DAL were not expected to decrease due to a reduction in travel related to Carswell AFB. Because DFW is a hub airport for two major airlines, it is likely that many seats filled by Carswell-related travelers were filled by other passenger demands.

### **3.7.3 Other Transportation Modes**

#### **Recent Trends**

Rail service was not available at Carswell AFB, but an operational rail network exists in the region. A Union Pacific freight line that services the AF Plant #4 is located along the western edge of the base. It connects with the main line 4 miles south of the base. The commuter and light rail

systems proposed for the Dallas/Fort Worth area will not extend into the ROI.

#### Closure Conditions

The closure of Carswell AFB caused no notable change in activity to the Union Pacific Railroad.

### **3.8 UTILITIES**

This section summarizes preclosure and closure conditions of utility systems on Carswell AFB and in the ROI. A more detailed presentation of these conditions is available in the Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas. Utility demand forecasts in the ROI are shown in Table 3.8-1 for the years 1990 to closure (1993).

Utility use at the time of closure (1993) for water, wastewater, and solid waste purveyors was developed from purveyor projections provided in 1992. Utility use at closure for energy purveyors was developed using historic consumption patterns and systemwide average annual growth rates. All projections were adjusted to reflect the decrease in use associated with base closure and are presented in Table 3.8-1.

#### **3.8.1 Water Supply**

The ROI for water supply and distribution is the area served by the city of Fort Worth's water supply system and the cities immediately adjacent to the base. These cities include River Oaks, Sansom Park, Westworth Village, and White Settlement. These suppliers can provide a total of 356 million gallons per day (MGD) to the region. In 1991, average consumption in the ROI was 130.2 MGD of water.

#### Recent Trends

Carswell AFB obtains its water through two interconnections with the city of Fort Worth's water system. The on-base water booster station pumps water through the military-owned system, which includes 695,000 gallons of active storage. Two additional facilities, with a capacity of 550,000 gallons of storage, are unavailable due to cracks and other repair problems. An additional 225,000-gallon storage tank is available for fire protection. In 1991, the on-base demand was 0.76 MGD.

The Off-Site WSA obtains non-potable water from two wells. Non-potable water from the Farmers Branch Creek is used to irrigate the golf course.

Fort Worth supplies water to its residents, estimated at 448,547 persons, and 25 other wholesale customers, including the cities of River Oaks,

**Table 3.8-1. Estimated Preclosure and Baseline Utility Demands in the ROI,  
1990 to Closure**

	1990	1991	1992	Closure (1993)
<b>Water consumption (MGD)</b>				
Preclosure forecast	123.1	130.2	133.9	157.1
Closure baseline	123.1	130.2	133.8	156.3
<b>Wastewater treatment (MGD)</b>				
Preclosure forecast	124.4	112.4	119.9	124.4
Closure baseline	124.4	112.4	119.8	123.9
<b>Solid Waste disposal (tons/day)</b>				
Preclosure forecast	4,461	4,549	4,639	4,733
Closure baseline	4,461	4,549	4,638	4,730
<b>Electricity consumption (MWH/day)</b>				
Preclosure forecast	34,375	35,062	35,500	35,900
Closure baseline	34,375	35,062	35,460	35,732
<b>Natural Gas consumption (MMCF/day)</b>				
Preclosure forecast	57.6	64.3	65.6	66.6
Closure baseline	57.6	64.3	65.4	66.3

MGD = Million gallons per day.

MMCF = Million cubic feet.

MWH = Megawatt-hours.

ROI = Region of Influence.

Sources: Cunningham, 1992; Dinyarian, 1992; Moltz, 1992; North Central Texas Council of Governments, 1992; Russell, 1992; Staggs, 1992; TU Electric, 1992.

Sansom Park, White Settlement, and Westworth Village. The city has a treatment capacity of 350 MGD and obtains its entire supply of water from a surface water supply system that principally relies on the runoff from the West Fork of the Trinity River.

Other water purveyors in the ROI (White Settlement and Sansom Park) obtain a portion of their water from groundwater sources. River Oaks obtains its water from Lake Worth and has a connection with Fort Worth.

#### Closure Conditions

Water consumption at Carswell AFB decreased as the drawdown of personnel occurred from 1992 to closure. Consumption from the retained military and OL activities is identified in Table 3.8-2. This amount was 1.3 percent of the on-base average daily demand in 1991. The resulting

**Table 3.8-2. Estimated On-Base Utility Demand**

	1991 (Preclosure)	1993 (Closure)		
	Total	Retained Military	OL	Total
Water consumption (MGD)	0.76	0.01	0.001	0.01
Wastewater treatment (MGD)	0.56	0.01	<0.001	0.01
Solid Waste disposal (tons/day)	14.25	1.55	0.050	1.60
Electrical consumption (MWH/day)	177.00	18.95	<0.001	18.95
Natural Gas consumption (MMCF/day)	0.51	0.04	<0.001	0.04

MGD = Million gallons per day.

MMCF = Million cubic feet.

MWH = Megawatt-hours.

OL = Operating Location.

baseline demand within the ROI in 1993 was estimated at 156.3 MGD (see Table 3.8-1). This demand was 19 MGD higher than consumption and is Fort Worth's projection that was developed 3 years ago. Water use trends would suggest that future demands will be approximately 10 to 15 percent less than predicted. At closure, retained military activities and the OL were estimated to require 0.01 MGD and 0.001 MGD, respectively.

### **3.8.2 Wastewater**

The ROI for wastewater treatment consists of the service area of the city of Fort Worth's wastewater collection and treatment system. Fort Worth provides services to its residents and to the cities of River Oaks, Sansom Park, Westworth Village, and White Settlement.

#### **Recent Trends**

All wastewater generated on Carswell AFB is treated by the city of Fort Worth. The base discharges to the city's system in accordance with Industrial Waste Discharge permit No. I-049. During FY 1991, on-base flows were estimated to be 0.56 MGD. On-base wastewater flows are directed to the city's treatment plant through three operating main sewer lines.

Wastewater from the Off-Site WSA flows into a septic system. Presently, the city of Fort Worth has a 15-inch sewer line within 1,000 feet of the Off-Site WSA.

Fort Worth provides wastewater treatment to its residents and 22 wholesale customers. The city has a single, activated, sludge wastewater treatment plant with a permitted capacity of 120 MGD. The effluent is discharged into the West Fork of the Trinity River and complies with all parameters of the

permit. The plant did exceed the average daily flow parameter for 7 months as a result of abnormally heavy rainfall and inflow into the system in 1990.

The city has an expansion program underway at its Village Creek treatment plant that will increase its treatment capacity to 144 MGD by 1994. There are plans to further increase treatment capacity to 161 MGD by the year 2000. The city also has various projects in the capital improvement program to upgrade the sewer system downstream from the base.

### Closure Conditions

Wastewater generation in the ROI increased to an estimated level of 123.9 MGD at the time of base closure. The increase was a result of continued growth in other sectors of the ROI. Wastewater generation at Carswell AFB from continuing operations is presented in Table 3.8-2. At closure, on-base wastewater flows were estimated to decrease to 0.01 MGD. This amount is 1.8 percent of the 1991 on-base average daily flows.

### **3.8.3 Solid Waste**

The ROI for solid waste disposal consists of waste disposal facilities that serve the Tarrant County area.

### Recent Trends

Solid waste is hauled off base by Waste Management, Inc. and placed in the firm's Westside landfill in Tarrant County. The landfill had 6,692,000 tons of available capacity in 1992, and is anticipated to close in the year 2011. In 1991, Carswell AFB generated approximately 14.25 tons/day. When active, the base recycled scrap metals (steel, copper, stainless steel) through the Defense Reutilization and Marketing Office (DRMO). Hospital wastes were hauled off base under contract by American Medical Transport (AMT). AMT hauled the waste to Stroud, Oklahoma, where it was incinerated by Midway Environmental Management.

Solid waste disposal in Tarrant County is handled by municipal and private collection systems and landfill facilities. The county has six landfills that handle solid waste and two more were pending facility permits in 1992. Four of the six operating landfills are owned by private companies; the cities of Fort Worth and Arlington operate their own landfills. The six landfills had a total remaining capacity of 18,976,000 tons in 1992 and an expected closure date of 2011. The North Central Texas Council of Governments (NCTCOG) is evaluating disposal capacity in its 16-county region. In 1992, NCTCOG indicated that both city landfills would run out of capacity by the year 2006 and that two private landfills would close in 1993. One of these two private landfills was given a permit extension and will close in 1995; the other was closed in 1993.



### Closure Conditions

Solid waste generation in the ROI was estimated to increase to a level of 4,730 tons/day in 1993 as a result of growth in Tarrant County. Solid-waste generation at closure was estimated to be reduced to 1.6 tons/day with 1.55 tons/day attributed to the retained military activities and 0.05 ton/day from the OL. This amount is 50 percent of the 1991 on-base solid waste generation.

### **3.8.4 Energy**

The ROI for energy consists of the local service areas for TU Electric and Lone Star Gas Company. The local service area for TU Electric consists of 33 cities in and around Tarrant County. The service area for Lone Star Gas Company encompasses Tarrant County and a number of other communities in the area.

#### **Electricity**

#### Recent Trends

Electricity is provided to Carswell AFB and the Off-Site WSA by TU Electric. The base consumed approximately 177 megawatt-hours per day (MWH/day) in 1991. Electrical power is delivered to Carswell AFB through a 138 kilovolt (kV) transmission line that enters the east side of the base near Farmers Branch Creek. The on-base substation is owned by TU Electric, and the distribution system is owned by the Air Force. Eight feeder lines emanate from the substation and supply electricity throughout the base via overhead and underground services.

TU Electric collects a gross receipts tax on electricity sold at Carswell AFB, which is given to the city where the electricity is sold. The main meter on which the majority of this tax is based is located within the city of Westworth Village. During the past 3 years, this tax has averaged \$100,000 and has been used by the city to support its operations.

TU Electric provides electrical power to a population of over 5.5 million persons in 87 counties in Texas. The system has the capability to meet a peak demand of 16,952 MW and in 1991 had electrical sales of 82,357,539 MWH. In the greater Fort Worth area, customers used 12,797,800 MWH, with Carswell AFB consuming 64,510 MWH in 1991. TU Electric does not anticipate any problems in meeting the level of demand experienced in recent years.

### Closure Conditions

Electrical consumption in the ROI was estimated to increase to 35,732 MWH in 1993. The demand for electricity at Carswell AFB at closure was estimated to be 18.95 MWH/day, or about 0.05 percent of the projected demand in the ROI. Retained military activities was estimated to use 18.95 MWH/day and the OL was estimated to consume minimal amounts of electricity.

### **Natural Gas**

#### Recent Trends

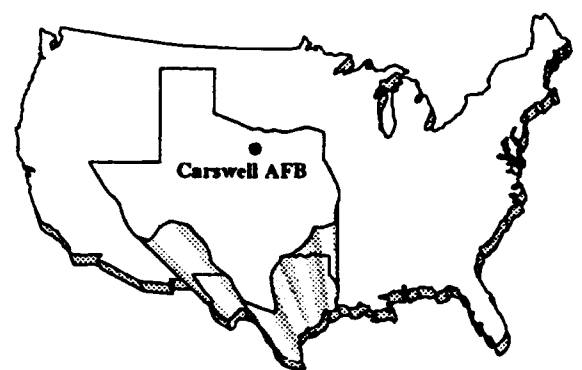
Service to Carswell AFB and the ROI is provided by Lone Star Natural Gas Company. Natural gas is supplied to the base via a 16-inch, company-owned line entering the west side of the base at Clifford Street. The Off-Site WSA does not have natural gas service. Carswell AFB natural gas consumption was 188 million cubic feet (MMCF) in 1991. This amount constituted less than 1 percent of the natural gas consumed in the ROI in 1991.

Lone Star Natural Gas Company provides natural gas to a large portion of northern Texas. In the Tarrant County area, they had approximately 151,600 customers with residential connections accounting for 91 percent of all customers.

### Closure Conditions

Natural gas consumption in the ROI was estimated to increase to 66.3 MMCF due to the overall population increase in the greater Fort Worth region. Natural gas consumption at Carswell AFB was estimated to decrease to 0.04 MMCF/day. This amount is less than 0.1 percent of retained military activities, which was estimated to consume 0.04 MMCF/day, and the OL was estimated to use negligible amounts of natural gas.

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## **CHAPTER 4**

# **SOCIOECONOMIC EFFECTS OF PROPOSED ACTION AND ALTERNATIVES**

## **4.0 SOCIOECONOMIC EFFECTS OF PROPOSED ACTION AND ALTERNATIVES**

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### **4.1 INTRODUCTION**

This chapter discusses the potential socioeconomic effects associated with implementation of the Proposed Action and two alternatives (No-Action/Realignment Alternative and Mixed Use Alternative) for reuse of Carswell AFB. The purpose of this study is to identify and analyze the major socioeconomic issues related to each of the three possibilities for future activity at the base. Comparisons of the effects of these alternatives with post-closure conditions, and with the No-Action/Realignment Alternative, will be made.

To help identify potential socioeconomic effects of the reuse of Carswell AFB, this study addresses a range of reasonable alternatives. For the purpose of this analysis, the Air Force has adopted a redevelopment plan developed by the CRA as the Proposed Action. In addition, the Air Force has also analyzed the effects associated with the Mixed Use and the No-Action/Realignment Alternatives. Actual decisions on reuse of the excess property will be made by the recipients subsequent to conveyance.

Descriptions of the effects of the alternatives are sequentially provided for each of the seven major issue areas: economic activity, population, housing, public services, public finance, transportation, and utilities. The Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas provides more detailed descriptions of effects to transportation and utilities.

Recommendations proposed by the 1991 Defense Base Closure and Realignment Commission (BRAC II) have become law, and provide for the retention of base property to support the continued operations of the AFRES 301st FW, the WHCA, and AF Plant #4. These retained military operations and OL activities, together with all other regional economic activity, comprise the baseline against which alternative uses of the base are compared. These baseline conditions are termed closure and post-closure and refer to conditions that might reasonably be expected in the future if 1993 BRAC III actions were not to occur.

The No-Action/Realignment Alternative results from the BRAC III recommendations. These legally-mandated actions require the relocation of several DOD organizations from NAS Dallas, NAS Memphis, and NAS Glenview to Carswell AFB. As a result, a portion of Carswell AFB will be designated as NAS Fort Worth, Joint Reserve Base, and will accommodate the retained BRAC II and realigned BRAC III military units. NAS Fort Worth activities are included in the military land use area and are incorporated into

each alternative. Thus, the No-Action/Realignment Alternative comprises (1) continued AF Plant #4 engine run-up and aircraft activities, (2) NAS Fort Worth (e.g., BRAC II, BRAC III), and (3) the OL.

The term "military" is used in this chapter to refer to activities associated with BRAC III only. It includes both the active duty and civilian components of the realignment. "Military reuse" refers to both the BRAC II and BRAC III activities

The Proposed Action is a development plan comprised of three elements: NAS Fort Worth, the FBOP federal medical center complex, and other civilian reuse including industrial, residential, commercial, and public facilities/recreation land uses.

The Mixed Use Alternative is a plan developed by the Air Force, consisting of NAS Fort Worth and civilian reuse. In this plan, civilian development includes office/industrial park uses, residential, commercial, public facilities/recreation, limited aircraft maintenance operations, and the conversion of the base hospital for private or public medical use and other uses.

**Context of Analysis.** This analysis addresses the timing of effects associated with each of the various alternative reuse plans of the base. The analysis covers the time period extending 20 years beyond the date of closure (September 1993) of Carswell AFB. Results are generally presented for each of the alternatives for the years 1998 (5 years after closure), 2003 (10 years after closure if reuse effects begin after 1998, but on or before 2003), and 2013 (20 years after closure).

Of particular importance in this analysis are site-related effects and migratory-related effects. Site-related effects include all activities associated with the base reuse. These include all direct and secondary employment and the resultant effects on population due to civilian reuse, and/or military activities, and/or caretaker activities.

Migratory-related effects are defined to be all of the effects associated with persons that move into the ROI solely as a result of reuse-related activities. The migratory effects are a component of the site-related effects. In addition to these migratory effects, the site-related effects include the reuse activities or caretaker activities related to the employment and population levels within the ROI before closure. For example, under the Proposed Action the total number of jobs would be 18,812, some of which would be filled by the local available labor pool and others would be filled by persons moving into the ROI for the purpose of gaining employment related to the reuse activities. It is projected that the activities associated with the OL would not generate migratory-related effects.

Many socioeconomic effects are primarily caused by population in-migration. These effects (e.g., migratory-related effects) include changes in housing demand, public service requirements, public education needs, local government expenditures and revenues, traffic volumes, and utility consumption. This analysis addresses the implications of population in-migration for each of these key areas of the local economy.

This analysis also recognizes the potential for community reactions stemming from "announcement effects" of information regarding the base's closure or reuse. Such announcements may affect the communities' or individuals' perceptions and, thus, could have important local economic consequences.

An example of one such effect would be the in-migration of people anticipating employment under one of the reuse options. If it were announced later that the base would remain closed and unused, many of these newcomers would leave the area to seek employment elsewhere. This announcement effect would, thus, include (1) a temporary increase in population in anticipation of future employment, and (2) a subsequent decline in population as people leave the area after the announcement. Bases with more than one closure announcement may not experience as severe an announcement effect.

Changes associated with announcement effects, while potentially important, are highly unpredictable and difficult to quantify. Such effects, therefore, were excluded from the quantitative analysis in this study. They are not displayed in any of the tabular or graphic data presented in this report.

The methods used to evaluate the effects of reuse of the site are consistent with those used to assess the effects of closure. These methods are described in Appendix B.

## **4.2 ECONOMIC ACTIVITY**

Under post-closure conditions, Carswell AFB would not be reused and the OL and BRAC II retained military activities at the base would contribute little economic stimulus to the ROI. The ROI employment level with the retained military and caretaker activities is projected to increase at an average annual rate of 1.5 percent between 1993 and the year 2013, from 730,956 to 987,952 jobs.

This rate is lower than the trend of 3.6 percent per year established between 1970 and 1990. The drop is a result of declining birth rates (the trend since the mid-1960s) and the aging population. These projection methods, from NPA Data Services, Inc., reflect national and international as well as regional and local growth trends.

The contribution made by the base to ROI employment levels would be 1,497 jobs throughout the 20-year study period and would be comprised of the following: 624 direct BRAC II, 50 direct OL, 765 secondary BRAC II, and 58 secondary OL jobs.

The personnel associated with BRAC II (retained military) are included in each of the alternatives analyzed in this study. Under the Proposed Action and Mixed Use Alternative, the 50 direct and 58 secondary jobs associated with OL activities would not be present. There would be no in-migration associated with post-closure conditions.

Of the alternatives evaluated for this study, the Mixed Use Alternative would generate the greatest economic effects.

#### **4.2.1 No-Action/Realignment Alternative**

**4.2.1.1 Site-Related Employment and Earnings.** The No-Action/Realignment Alternative is projected to generate 7,244 site-related jobs by 1998 (Table 4.2-1). By the year 2013, there would be 7,118 site-related jobs, an increase due to realignment of 5,621 jobs or 375 percent, over closure conditions. Employment would decrease from 1998 to 2013 due to the completion of construction in 1998. The 7,118 jobs in 2013 would be comprised of 5,621 BRAC III, 1,389 BRAC II, and 108 OL positions.

**Direct Jobs in the ROI.** In 1998, direct site-related employment is estimated to be 3,931 jobs and would remain at this level through the year 2013. Of this total, 3,257 positions would be attributable to military realignment activities.

**Secondary Jobs in the ROI.** In 1998, the No-Action/Realignment Alternative would generate 3,313 site-related secondary jobs in the ROI, decreasing to 3,187 by the year 2013. NAS Fort Worth would create 2,490 of these jobs in 1998, decreasing to 2,364 by 2013.

Secondary jobs would be created through employee payroll expenditures, and the OL's military procurement of goods and services in the region. Expenditures for military construction would contribute 126 secondary jobs to the ROI. Military construction would be complete in 1998.

**Earnings.** Total site-related earnings associated with the implementation of the No-Action/Realignment Alternative are projected to reach \$163,294,960 in 1998 and \$160,296,460 by the year 2013. By 2013, this would represent an increase of \$122,303,087 or 323 percent over closure conditions.

**4.2.1.2 Migratory-Related Employment.** In-migration of workers into the ROI to fill the newly created direct and secondary jobs associated with the No-Action/Realignment Alternative would commence in 1993 and total



**Table 4.2-1. ROI Employment and Earnings Projections: No-Action/Realignment Alternative**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Site-Related Employment</b>				
Direct	674	3,931	3,931	3,931
BRAC II	624	624	624	624
Active Duty	0	0	0	0
Civilian	624	624	624	624
BRAC III	NA	3,257	3,257	3,257
Active Duty	NA	2,361	2,361	2,361
Civilian	NA	896	896	896
OL	50	50	50	50
Secondary	823	3,313	3,187	3,187
BRAC II	765	765	765	765
BRAC III	NA	2,490	2,364	2,364
OL	58	58	58	58
Total	1,497	7,244	7,118	7,118
<b>Site-Related Earnings (1989\$)</b>				
Direct	21,827,373	94,914,360	94,914,360	94,914,360
BRAC II	20,723,964	20,723,964	20,723,964	20,723,964
Active Duty	0	0	0	0
Civilian	20,723,964	20,723,964	20,723,964	20,723,964
BRAC III	NA	73,086,987	73,086,987	73,086,987
Active Duty	NA	52,166,295	52,166,295	52,166,295
Civilian	NA	20,920,692	20,920,692	20,920,692
OL	1,103,409	1,103,409	1,103,409	1,103,409
Secondary	16,166,000	68,380,600	65,382,100	65,382,100
BRAC II	14,832,200	14,832,200	14,832,200	14,832,200
BRAC III	NA	52,214,600	49,216,100	49,216,100
OL	1,333,800	1,333,800	1,333,800	1,333,800
Total	37,993,373	163,294,960	160,296,460	160,296,460
<b>ROI Employment</b>				
Post-Closure Conditions <sup>(b)</sup>	730,956	795,429	863,667	987,952
No-Action/Realignment Alternative <sup>(c)</sup>	NA	5,747	5,621	5,621
Total with No-Action/Realignment Alternative	NA	801,176	869,288	993,573
<b>In-Migrating Workers<sup>(c)</sup></b>				
Direct	0	1,171	1,171	1,171
Secondary	0	25	24	24
Total	0	1,196	1,195	1,195

Notes: (a) 1993 = Closure conditions.

(b) Contains BRAC II and OL from closure analysis.

(c) BRAC III only; BRAC II and OL are accounted for in the post-closure conditions.

BRAC = Base Realignment and Closure.

NA = Not applicable.

OL = Operating Location.

ROI = Region of Influence.

1,196 workers by 1998. Employment generated by this alternative could create a demand for 1,195 in-migrating workers by the year 2013 (see Table 4.2-1). There would not be a demand for in-migrating workers under the post-closure conditions.

By the year 2013, approximately 21.3 percent of the 5,621 additional site-related jobs over the post-closure level are expected to be filled by persons moving into the ROI, including active duty military personnel. Of the remaining 4,426 jobs, 1,318 are associated with active duty military personnel who are projected to commute to NAS Fort Worth from the Dallas area, 802 jobs would be filled by civilian personnel who would also commute from the Dallas area, leaving 2,306 jobs to be filled by workers residing in the ROI at that time.

#### **4.2.1.3 ROI Employment with the No-Action/Realignment Alternative.**

Under the No-Action/Realignment Alternative, ROI employment would rise to 801,176 in 1998 and to 993,573 in the year 2013. This represents an increase of 5,621 jobs or 0.6 percent over post-closure conditions in 2013 (Figure 4.2-1). The resulting average growth rate in ROI employment would be 1.5 percent per year from 1993 to 2013. This would be the same rate of growth as under post-closure conditions.

#### **4.2.2 Proposed Action**

The Proposed Action consists of the military reuse operations and the civilian development of the remainder of the site. Implementation of the Proposed Action would commence in 1993 immediately following base disposal.

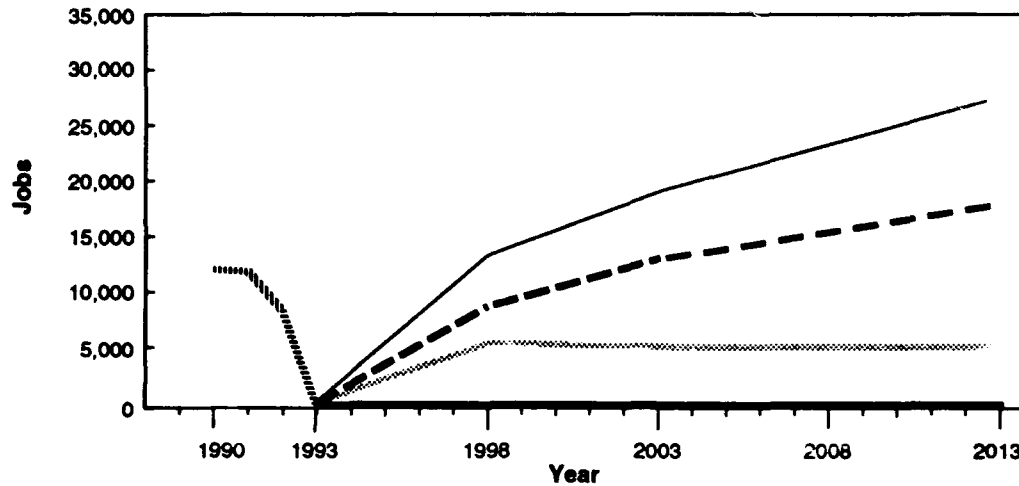
**4.2.2.1 Site-Related Employment and Earnings.** The Proposed Action is projected to generate 11,032 site-related jobs by 1998 (Table 4.2-2). By the year 2013, there would be a total of 18,812 site-related jobs, an increase of 17,315 jobs or 1,157 percent over closure conditions. This also represents an increase of 11,694 jobs due to civilian reuse or 164 percent over the No-Action/Realignment Alternative. In 2013, site-related jobs would be comprised of 7,010 military reuse and 11,802 civilian reuse positions.

**Direct Jobs in the ROI.** In 1998, there would be 5,611 direct site-related jobs associated with the Proposed Action. By the year 2013, direct site-related employment is estimated to total 8,982 jobs, of which 5,101 positions would be created by civilian reuse.

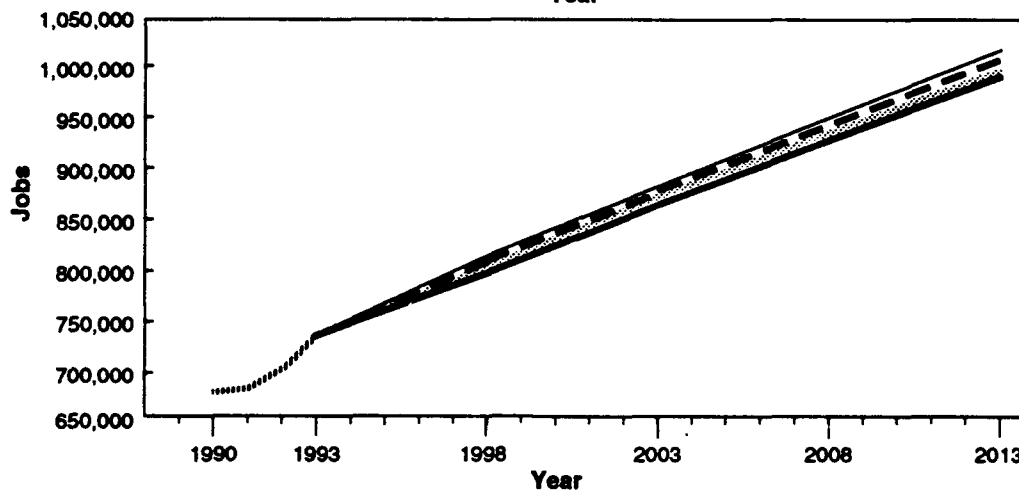
Nearly all of the civilian direct jobs would be associated with the operations activities. In 1998, about 150 direct jobs (8.7 percent of the 1,730 direct jobs) would be attributable to construction, and by 2013, only 48 direct jobs (0.9 percent of the 5,101 direct jobs) would be construction positions. The

	1993(a)	1998	2003	2013
Post-closure Conditions	1,497	1,497	1,497	1,497
<b>ALTERNATIVE</b>				
No-Action/Realignment	1,497	5,747	5,621	5,621
Proposed Action	1,497	9,535	13,355	17,315
Mixed Use	1,497	14,349	18,342	27,276

**Reuse-Related  
Employment  
Effects(b)**



**Reuse-Related  
Employment  
Effects(b)**



**Total ROI Employment  
Including Reuse-  
Related Effects**

## EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment
- - - - Proposed Action
- Mixed Use

## Reuse-Related Employment Effects

(a) The 1993 values represent total base-related employment under the closure baseline.

(b) Employment effects represent the change in employment over the post-closure conditions.

**Figure 4.2-1**

**Table 4.2-2. ROI Employment and Earnings Projections: Proposed Action**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Site-Related Employment</b>				
Civilian Reuse	NA	3,896	7,842	11,802
Direct	NA	1,730	3,412	5,101
Construction	NA	150	96	48
Operations	NA	1,580	3,316	5,053
Secondary	NA	2,166	4,430	6,701
Military Reuse	1,497	7,136	7,010	7,010
Direct	674	3,881	3,881	3,881
Secondary	823	3,255	3,129	3,129
Total	1,497	11,032	14,852	18,812
<b>Site-Related Earnings (1989\$)</b>				
Civilian Reuse	NA	79,797,724	156,123,323	232,801,289
Direct	NA	36,073,824	68,596,423	101,289,289
Construction	NA	3,952,394	2,521,418	1,260,709
Operations	NA	32,121,430	66,075,005	100,028,580
Secondary	NA	43,723,900	87,526,900	131,512,000
Military Reuse	37,993,373	160,857,751	157,859,251	157,859,251
Direct	21,827,373	93,810,951	93,810,951	93,810,951
Secondary	16,166,000	67,046,800	63,048,300	64,048,300
Total	37,993,373	240,655,475	313,982,574	390,660,540
<b>ROI Employment</b>				
Civilian Reuse Site-Related Employment <sup>(b)</sup>	NA	3,788	7,734	11,694
ROI Employment with No-Action/Realignment Alternative	730,956	801,176	869,288	993,573
Post-closure Conditions	730,956	795,429	863,667	987,952
Military Reuse <sup>(c)</sup>	NA	5,747	5,621	5,621
Total ROI Employment with Proposed Action	730,956	804,964	877,022	1,005,267
<b>In-Migrating Workers</b>				
Civilian Reuse	0	56	111	168
Direct	0	34	67	101
Construction	0	2	1	0
Operations	0	32	66	101
Secondary	0	22	44	67
Military Reuse	0	1,196	1,195	1,195
Total	0	1,252	1,306	1,363

Notes: (a) 1993 = Closure conditions.

(b) These data have been adjusted by 108 to account for the loss in OL employment due to reuse.

(c) These data have been adjusted by 1,389 to account for the BRAC II employment included in the post-closure projections.

BRAC = Base Realignment and Closure.

NA = Not applicable.

OL = Operating Location.

ROI = Region of Influence.

civilian construction workers associated with the Proposed Action include those personnel who are employed in demolition, construction, and renovation activities throughout the period of analysis. The jobs associated with operations include, in addition to the workers employed in activities generated by the various land uses, those personnel who are occupied in maintaining and repairing the facilities in use under the Proposed Action.

By the year 2013, the civilian reuse activities associated with office, retail, and institutional (prison) land uses would create the greatest number of direct jobs. The military reuse jobs would account for approximately 43.2 percent of the direct site-related employment in 2013.

**Secondary Jobs in the ROI.** In 1998, site-related secondary employment is projected to be 5,421 jobs. By the year 2013, the Proposed Action would create 9,830 site-related secondary jobs in the ROI, of which 6,701 jobs would be generated by the civilian reuse activities.

**Earnings.** Total site-related earnings associated with the Proposed Action are projected to reach \$240,655,475 in 1998 and \$390,660,540 by the year 2013. The civilian reuse portion of the total site-related earnings would be \$232,801,289 in 2013. This would be a \$230,364,080 or 144 percent increase over the No-Action/Realignment Alternative and a \$352,667,167 or 931 percent increase over post-closure conditions in 2013.

**4.2.2.2 Migratory-Related Employment.** In-migration of workers into the ROI to fill jobs created by the Proposed Action would commence in 1993, and would reach a total of 1,252 workers in 1998. By the year 2013, this alternative would create a demand for 1,363 in-migrating workers. Civilian reuse would result in an increase of 168 in-migrating workers or 14.1 percent over the No-Action/Realignment Alternative. The 168 in-migrating workers represent 12.3 percent of the projected total in-migrating workers in 2013.

**4.2.2.3 ROI Employment with the Proposed Action.** Under the Proposed Action, total ROI employment would rise to 804,964 jobs in 1998, and to 1,005,267 jobs in the year 2013. In 2013, this would represent an increase of 17,315 jobs or 1.8 percent over post-closure conditions and an increase of 11,694 jobs or 1.2 percent over the No-Action/Realignment Alternative (see Table 4.2-2, Figure 4.2-1). The average annual growth rate in ROI employment between 1993 and 2013 would be 1.6 percent, as compared to 1.5 percent under both the No-Action/Realignment Alternative and post-closure conditions.

### **4.2.3 Mixed Use Alternative**

The Mixed Use Alternative incorporates the military activities and the civilian development of the excess base property. Implementation of the Mixed Use Alternative would commence in 1993.

**4.2.3.1 Site-Related Employment and Earnings.** The Mixed Use Alternative is projected to generate 15,846 site-related jobs by 1998 (Table 4.2-3). By the year 2013, there would be a total of 28,773 site-related jobs, or an increase of 27,276 jobs (1,822 percent) over closure conditions and an increase of 21,655 jobs due to civilian reuse (304 percent) over the No-Action/Realignment Alternative. In 2013, site-related employment would comprise 7,010 military reuse and 21,763 civilian reuse jobs.

**Direct Jobs in the ROI.** In 1998, there would be 7,712 direct site-related jobs associated with the Mixed Use Alternative. By the year 2013, the direct site-related employment is estimated to total 13,338 jobs, of which 9,457 jobs would be generated by the civilian reuse.

Nearly all of the civilian direct jobs would be associated with the operations activities. In 1998, about 370 direct jobs (9.7 percent of 3,831 direct jobs) would be attributable to construction; by the year 2013, only 156 direct jobs (1.6 percent of 9,457 direct jobs) would be construction positions.

By 2013, civilian reuse activities associated with office, industrial, and institutional (medical) land uses would create the greatest number of direct jobs. The military reuse positions would account for approximately 29.1 percent of the direct site-related employment in the year 2013.

**Secondary Jobs in the ROI.** In 1998, site-related activities are projected to generate 8,134 secondary jobs. By the year 2013, there would be 15,435 secondary jobs in the ROI. Of this total, 12,306 positions would be created by the civilian reuse activities.

**Earnings.** Total site-related earnings associated with the Mixed Use Alternative are projected to reach \$346,119,198 in 1998 and \$619,644,519 by the year 2013. In 2013, this would be an increase of \$581,651,146 or 1,535 percent over the post-closure conditions and \$459,348,059 or 287 percent over the No-Action/Realignment Alternative. The civilian reuse contributions to the total site-related earnings would be \$461,785,268 in 2013.

**4.2.3.2 Migratory-Related Employment.** In-migration of workers into the ROI to fill jobs generated by the Mixed Use Alternative would begin in 1993 and would reach a total of 1,318 workers in 1998. By the year 2013, this alternative could create a demand for 1,506 in-migrating workers. Civilian reuse would result in an increase of 311 in-migrating workers or 26.0

**Table 4.2-3. ROI Employment and Earnings Projections: Mixed Use Alternative**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Site-Related Employment</b>				
Civilian Reuse	NA	8,710	12,829	21,763
Direct	NA	3,831	5,589	9,457
Construction	NA	370	214	156
Operations	NA	3,461	5,375	9,301
Secondary	NA	4,879	7,240	12,306
Military Reuse	1,497	7,136	7,010	7,010
Direct	674	3,881	3,881	3,881
Secondary	823	3,255	3,129	3,129
Total	1,497	15,846	19,839	28,773
<b>Site-Related Earnings (1989\$)</b>				
Civilian Reuse	NA	185,261,447	271,476,056	461,785,268
Direct	NA	85,030,747	123,128,756	209,266,868
Construction	NA	9,742,566	5,622,862	4,090,946
Operations	NA	75,288,181	117,505,894	205,175,922
Secondary	NA	100,230,700	148,347,300	252,518,400
Military Reuse	37,993,373	160,857,751	157,859,251	157,859,251
Direct	21,827,373	93,810,951	93,810,951	93,810,951
Secondary	16,166,000	67,046,800	64,048,300	64,048,300
Total	37,993,373	346,119,198	429,335,307	619,644,519
<b>ROI Employment</b>				
Civilian Reuse Site-Related Employment <sup>(b)</sup>	NA	8,602	12,721	21,655
ROI Employment with No-Action/Realignment Alternative	730,956	801,176	869,288	993,573
Post-closure Conditions	730,956	795,429	863,667	987,952
Military Reuse <sup>(c)</sup>	NA	5,747	5,621	5,621
Total ROI Employment with Mixed Use Alternative	730,956	809,778	882,009	1,015,228
<b>In-Migrating Workers</b>				
Civilian Reuse	0	122	182	311
Direct	0	73	110	188
Construction	0	4	2	2
Operations	0	69	108	186
Secondary	0	49	72	123
Military Reuse	0	1,196	1,195	1,195
Total	0	1,318	1,377	1,506

Notes: (a) 1993 = Closure conditions.

(b) These data have been adjusted by 108 to account for the loss in OL employment due to reuse.

(c) These data have been adjusted by 1,389 to account for the BRAC II employment included in the post-closure projections.

BRAC = Base Realignment and Closure.

NA = Not applicable.

OL = Operating Location.

ROI = Region of Influence.

percent over the No-Action/Realignment Alternative. The 311 in-migrating workers would represent 20.7 percent of the projected total in-migrating personnel in 2013.

**4.2.3.3 ROI Employment with the Mixed Use Alternative.** Under the Mixed Use Alternative, total ROI employment would rise to 809,778 jobs in 1998, and 1,015,228 jobs in the year 2013. This represents an increase of 27,276 positions or 2.8 percent over post-closure conditions and an increase of 21,655 positions or 2.2 percent over the No-Action/ Realignment Alternative (see Figure 4.2-1). From 1993 to 2013, the average annual growth rate in ROI employment would be 1.7 percent under the Mixed Use Alternative. This compares to 1.5 percent under both post-closure conditions and the No-Action/Realignment Alternative.

### **4.3 POPULATION**

If NAS Fort Worth were not to be established, total population in the ROI would increase from 1,436,347 at closure in 1993 to 1,832,313 in the year 2013. These figures represent population projections developed using NPA Data Services, Inc. projected growth rates with adjustments for base closure and the continued presence of the BRAC II and OL personnel and their dependents in the ROI and, therefore, exclude the military realignment to Carswell AFB. The growth rate represents an average annual rate of 1.2 percent.

This projected growth rate in ROI population would be a decrease from the 2.5 percent growth rate between 1970 and 1990. This decrease is mainly due to the declining birth rate and the aging population. The population is projected to increase in the future at a rate lower than that of employment. This difference is attributable to an increase in the labor force participation rate. The projection methods used by NPA Data Services, Inc. include national/international, as well as regional and local economic growth trends and the demographic patterns of births, deaths, and regional/international migrations.

Due to the large available labor pool, many of the employment opportunities created by the reuse alternatives would be filled by individuals residing in the ROI. Additionally, the number of workers commuting into the ROI on a daily and weekly basis from surrounding metropolitan areas would tend to reduce the number of in-migrating workers to the region. This would be especially true during short-term construction peaks.

**Population In-Migration Assumptions.** As described in Appendix B, workers are projected to relocate to the ROI depending on the number and type of jobs created. For example, in the case of the No-Action/Realignment Alternative, a portion of the military personnel (and their dependents) would transfer to the base from other installations located outside the ROI, creating



population in-migration. The majority of employment opportunities created by the civilian portion of the reuse alternatives would be filled by individuals residing in the ROI. The balance of the required civilian workers (with their dependents) would relocate to the ROI, creating additional population in-migration. There will be no population in-migration under post-closure conditions.

**Residential Distribution Assumptions.** Of the military personnel relocating to the ROI, a portion would reside in base dormitories and military family housing. The remainder would reside off base in the surrounding communities. It is expected that those in-migrating military personnel (and their dependents) residing off base would be distributed in a manner similar to that of the Air Force active duty personnel present prior to closure. The in-migrating direct civilian personnel and secondary workers whose jobs are associated with payroll expenditures of both military reuse and civilian reuse direct workers are expected to exhibit a residential pattern similar to that displayed by the employees of AF Plant #4. The secondary workers whose jobs would be associated with procurement expenditures would be distributed among communities in accordance with the population distribution described in the 1990 U.S. Census of Population.

The in-migrating persons to both Ft. Worth and Westworth Village are assumed to reside both on and off base. The number of persons projected to live on base in the area that falls within Fort Worth's jurisdiction is 537, and within Westworth Village's jurisdiction is 145 under all alternatives. It is assumed that all on-base housing units would be occupied by in-migrating persons.

With regard to the off-base increase in population attributable to in-migration, the projected number of persons varies from 1,325 under the No-Action/Realignment Alternative, to 1,520 under the Proposed Action, and 1,688 under the Mixed Use Alternative.

#### **4.3.1 No-Action/Realignment Alternative**

**4.3.1.1 Site-Related Population.** The total site-related population is projected to reach 13,267 in 1998 and 12,935 by the year 2013. This represents an increase of 10,091 persons or 355 percent over post-closure conditions in 2013 due to military realignment (Table 4.3-1). The reduction projected after 1998 is attributable to the completion of construction activity on the base associated with realignment and the resulting reduced employment level. The communities with the largest site-related population by 2013 include Fort Worth (4,991 persons off base), Westworth Village (139 persons off base), Benbrook (222 persons), and White Settlement (212 persons).

**Table 4.3-1. Site-Related Population: No-Action/Realignment Alternative**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Persons by Labor Category</b>				
Direct	1,284	4,503	4,503	4,503
BRAC II	1,153	1,153	1,153	1,153
BRAC III	NA	3,219	3,219	3,219
OL	131	131	131	131
Secondary	1,560	8,764	8,432	8,432
BRAC II	1,413	1,413	1,413	1,413
BRAC III	NA	7,204	6,872	6,872
OL	147	147	147	147
ROI Total	2,844	13,267	12,935	12,935
<b>Persons by Location</b>				
Johnson County	177	799	774	774
Parker County	342	903	887	887
Tarrant County	2,371	11,567	11,274	11,274
Benbrook	41	227	222	222
Fort Worth	1,235	5,636	5,528	5,528
Lake Worth	9	38	35	35
River Oaks	9	92	90	90
Sansom Park	19	58	58	58
Westover Hills	10	14	14	14
Westworth Village	5	284	284	284
White Settlement	12	212	212	212
Rest of County	1,031	5,004	4,831	4,831
ROI Total	2,844	13,267	12,935	12,935

Note: (a) 1993 = Closure conditions.

BRAC = Base Realignment and Closure.

NA = Not applicable.

OL = Operating Location.

ROI = Region of Influence.

**4.3.1.2 Migratory-Related Population.** The migratory-related population changes expected to occur due to the No-Action/Realignment Alternative are shown in Table 4.3-2. Migratory-related population changes are projected to be 2,875 persons in 1998 and 2,872 persons in the year the year 2013. The reduction is attributable to the completion of construction activity in 1998 and the resultant decline in the number of construction workers. The communities with the greatest migratory-related population increases by the year 2013 include Fort Worth with 1,862 persons, or 64.8 percent of the ROI total (of which 1,325 would reside off base), Westworth Village with 252 persons, or 8.8 percent (of which 107 would reside off base), Benbrook with 84 persons or 2.9 percent and White Settlement with 81 persons or 2.8 percent.

**4.3.1.3 ROI Population with the No-Action/Realignment Alternative.** Under the No-Action/Realignment Alternative, the ROI population is projected to rise to 1,533,423 persons in 1998 and 1,835,185 persons in the year 2013. This would be an increase of 2,872 persons or 0.16 percent over closure conditions in 2013 (see Table 4.3-2). The average annual growth rate in ROI population, from 1993 to 2013, would be 1.2 percent, the same as under post-closure conditions. The projected ROI population trend, compared with closure conditions and the other alternatives, is presented in Figure 4.3-1.

#### **4.3.2 Proposed Action**

**4.3.2.1 Site-Related Population.** Under the Proposed Action, the total site-related population is projected to reach 23,319 persons in 1998. By the year 2013, site-related population would be 43,945 persons, an increase of 41,101 persons or 1,445 percent over post-closure conditions and an increase of 31,010 persons or 240 percent over the No-Action/Realignment Alternative (Table 4.3-3). The civilian reuse portion of the total site-related population would be 10,330 persons in 1998 and 31,288 persons in 2013. The communities expected to accommodate the greatest site-related population by the year 2013 are Fort Worth (16,631 persons off base), Benbrook (644 persons), White Settlement (614 persons), and Westworth Village (240 persons off base).

**4.3.2.2 Migratory-Related Population.** The total migratory population is projected to reach 3,038 persons in 1998 and 3,360 persons in the year 2013. This represents an increase of 488 persons or 17.0 percent over the No-Action/Realignment Alternative (Table 4.3-4). The difference (488) would be the civilian reuse share of in-migrating population. The communities expected to experience the greatest migratory population increases by the year 2013 include Fort Worth (2,057 persons, of which 1,520 persons would reside off base), Westworth Village (252 persons, of which 107 would reside off base), Benbrook (90 persons), and White Settlement (87 persons).

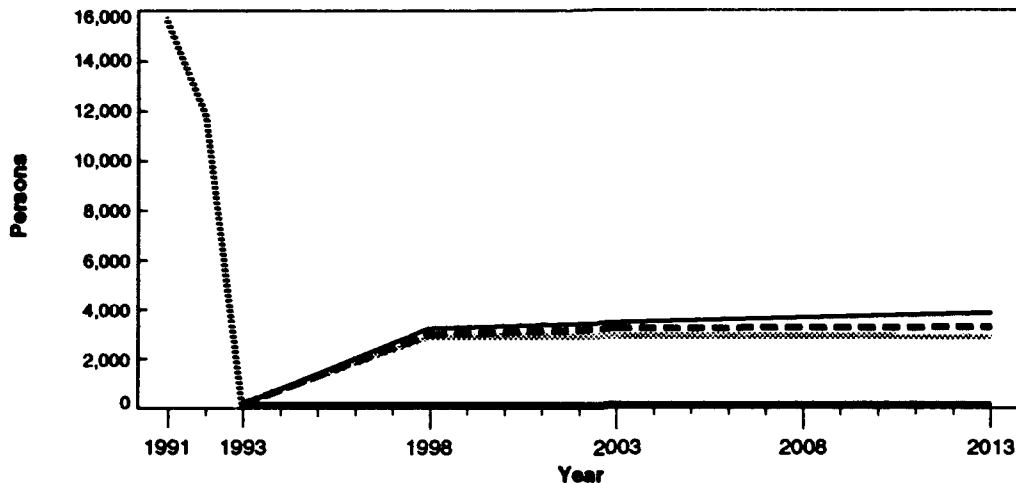
**Table 4.3-2. Regional Population Effects: No-Action/Realignment Alternative**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Post-Closure ROI Population</b>				
Johnson County	110,182	120,739	131,949	152,689
Parker County	73,040	79,883	87,158	100,637
Tarrant County	1,253,125	1,329,926	1,415,208	1,578,987
Benbrook	19,314	25,590	30,838	44,700
Fort Worth	442,499	494,796	534,088	622,090
(on base)	0	0	0	0
(off base)	442,499	494,796	534,088	622,090
Lake Worth	4,587	4,728	4,833	5,051
River Oaks	6,228	6,063	5,919	5,640
Sansom Park	3,785	3,788	3,791	3,798
Westover Hills	659	660	660	661
Westworth Village	582	618	618	618
(on base)	0	0	0	0
(off base)	582	618	618	618
White Settlement	14,419	16,358	17,569	20,253
Rest of County	761,052	777,325	816,892	876,176
ROI Total	1,436,347	1,530,548	1,634,315	1,832,313
<b>Migratory-Related Population Changes</b>				
Johnson County	NA	35	35	35
Parker County	NA	81	81	81
Tarrant County	NA	2,759	2,756	2,756
Benbrook	NA	84	84	84
Fort Worth	NA	1,862	1,862	1,862
(on base)	NA	537	537	537
(off base)	NA	1,325	1,325	1,325
Lake Worth	NA	3	3	3
River Oaks	NA	38	38	38
Sansom Park	NA	17	17	17
Westover Hills	NA	3	3	3
Westworth Village	NA	252	252	252
(on base)	NA	145	145	145
(off base)	NA	107	107	107
White Settlement	NA	81	81	81
Rest of County	NA	419	416	416
ROI Total		2,875	2,872	2,872
<b>Total ROI Population</b>				
Johnson County	110,182	120,774	131,984	152,724
Parker County	73,040	79,964	87,239	100,718
Tarrant County	1,253,125	1,332,685	1,417,964	1,581,743
Benbrook	19,314	25,674	30,922	44,784
Fort Worth	442,499	496,658	535,950	623,952
(on base)	0	537	537	537
(off base)	442,499	496,121	535,413	623,415
Lake Worth	4,587	4,731	4,836	5,054
River Oaks	6,228	6,101	5,957	5,678
Sansom Park	3,785	3,805	3,808	3,815
Westover Hills	659	663	663	664
Westworth Village	582	870	870	870
(on base)	0	145	145	145
(off base)	582	625	625	625
White Settlement	14,419	16,439	17,650	20,334
Rest of County	761,052	777,744	817,308	876,592
ROI Total	1,436,347	1,533,423	1,637,187	1,835,185

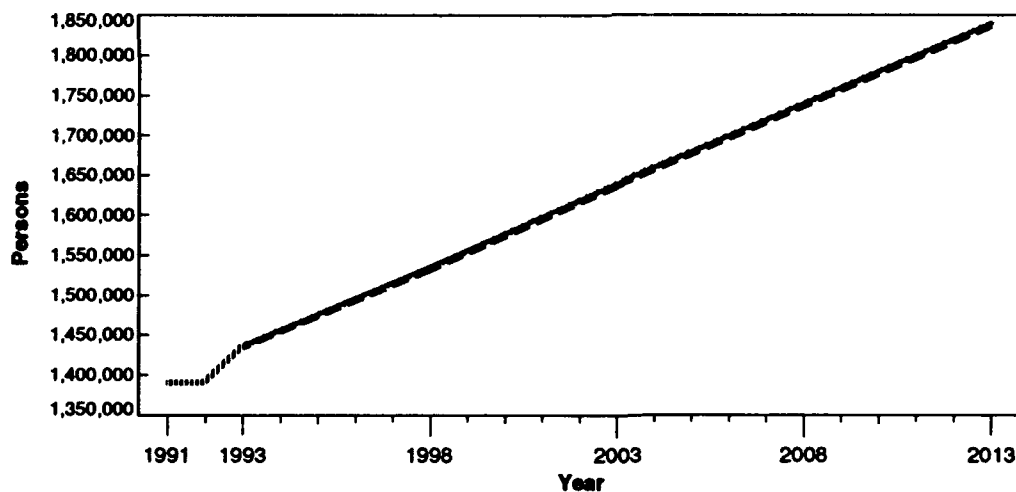
Note: (a) 1993 = Closure conditions.  
NA = Not applicable.  
ROI = Region of Influence.

ALTERNATIVE	1993 (a)	1998	2003	2013
No-Action/Realignment	0	2,875	2,872	2,872
Proposed Action	0	3,038	3,195	3,360
Mixed Use	0	3,230	3,401	3,774

**Migratory-Related  
Population  
Effects (b)**



**Migratory-Related  
Population  
Effects (b)**



**Total ROI Population  
Including Migratory-  
Related Effects (c)**

## EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment
- - - Proposed Action
- Mixed Use

## Migratory-Related Population Effects

- (a) 1993 represents closure baseline conditions.  
 (b) Migratory-related population effects are the persons that would move into the ROI solely as a result of reuse.  
 (c) Changes in alternatives are too small to be noticeable on graph.

**Figure 4.3-1**

**Table 4.3-3. Site-Related Population: Proposed Action**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Persons by Labor Category</b>				
Civilian Reuse	NA	10,330	20,793	31,288
Direct	NA	4,595	9,064	13,547
Construction	NA	399	254	128
Operations	NA	4,196	8,810	13,419
Secondary	NA	5,735	11,729	17,741
Military Reuse	2,844	12,989	12,657	12,657
Direct	1,284	4,372	4,372	4,372
Secondary	1,560	8,617	8,285	8,285
Total	2,844	23,319	33,450	43,945
<b>Persons by Location: Civilian Reuse</b>				
Johnson County	NA	739	1,489	2,242
Parker County	NA	943	1,870	2,804
Tarrant County	NA	8,648	17,434	26,242
Benbrook	NA	141	282	426
Fort Worth	NA	3,893	7,813	11,746
Lake Worth	NA	32	67	102
River Oaks	NA	56	112	170
Sansom Park	NA	40	74	111
Westover Hills	NA	13	24	37
Westworth Village	NA	31	67	101
White Settlement	NA	133	269	408
Rest of County	NA	4,309	8,726	13,141
ROI Total	NA	10,330	20,793	31,288
<b>Persons by Location: Military Reuse</b>				
Johnson County	177	779	754	754
Parker County	342	878	862	862
Tarrant County	2,371	11,332	11,041	11,041
Benbrook	41	223	218	218
Fort Worth	1,235	5,530	5,422	5,422
Lake Worth	9	38	35	35
River Oaks	9	92	90	90
Sansom Park	19	58	58	58
Westover Hills	10	14	14	14
Westworth Village	5	284	284	284
White Settlement	12	208	206	206
Rest of County	1,031	4,885	4,714	4,714
ROI Total	2,844	12,989	12,657	12,657
<b>Persons by Location: Total</b>				
Johnson County	177	1,518	2,243	2,996
Parker County	342	1,821	2,732	3,666
Tarrant County	2,371	19,980	28,475	37,283
Benbrook	41	364	500	644
Fort Worth	1,235	9,423	13,235	17,168
Lake Worth	9	70	102	137
River Oaks	9	148	202	260
Sansom Park	19	98	132	169
Westover Hills	10	27	38	51
Westworth Village	5	315	351	385
White Settlement	12	341	475	614
Rest of County	1,031	9,194	13,440	17,855
ROI Total	2,844	23,319	33,450	43,945

Note: (a) 1993 = Closure conditions.  
 NA = Not applicable.  
 ROI = Region of Influence.

**Table 4.3-4. Regional Population Effects: Proposed Action**  
**Page 1 of 2**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Post-Closure ROI Population</b>				
Johnson County	110,182	120,739	131,949	152,689
Parker County	73,040	79,883	87,158	100,637
Tarrant County	1,253,125	1,329,926	1,415,208	1,578,987
Benbrook	19,314	25,590	30,838	44,700
Fort Worth	442,499	494,796	534,088	622,090
(on base)	0	0	0	0
(off base)	442,499	494,796	534,088	622,090
Lake Worth	4,587	4,728	4,833	5,051
River Oaks	6,228	6,063	5,919	5,640
Sansom Park	3,785	3,788	3,791	3,798
Westover Hills	659	660	660	661
Westworth Village	582	618	618	618
(on base)	0	0	0	0
(off base)	582	618	618	618
White Settlement	14,419	16,358	17,569	20,253
Rest of County	761,052	777,325	816,892	876,176
ROI Total	1,436,347	1,530,548	1,634,315	1,832,313
<b>Migratory-Related Population Changes: Civilian Reuse</b>				
Johnson County	NA	12	21	32
Parker County	NA	15	32	47
Tarrant County	NA	136	270	409
Benbrook	NA	0	6	6
Fort Worth	NA	67	127	195
Lake Worth	NA	0	0	0
River Oaks	NA	0	0	3
Sansom Park	NA	0	0	0
Westover Hills	NA	0	0	0
Westworth Village	NA	0	0	0
White Settlement	NA	0	6	6
Rest of County	NA	69	131	199
ROI Total	NA	163	323	488
<b>Migratory-Related Population Changes: Military Reuse</b>				
Johnson County	NA	35	35	35
Parker County	NA	81	81	81
Tarrant County	NA	2,759	2,756	2,756
Benbrook	NA	84	84	84
Fort Worth	NA	1,862	1,862	1,862
(on base)	NA	537	537	537
(off base)	NA	1,325	1,325	1,325
Lake Worth	NA	3	3	3
River Oaks	NA	38	38	38
Sansom Park	NA	17	17	17
Westover Hills	NA	3	3	3
Westworth Village	NA	252	252	252
(on base)	NA	145	145	145
(off base)	NA	107	107	107
White Settlement	NA	81	81	81
Rest of County	NA	419	416	416
ROI Total	NA	2,875	2,872	2,872

Note: (a) 1993 = Closure conditions.  
NA = Not applicable.  
ROI = Region of Influence.

**Table 4.3-4. Regional Population Effects: Proposed Action**  
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	1993 <sup>(a)</sup>	1998	2003	2013
<b>Migratory-Related Population Changes: Total</b>				
Johnson County	NA	47	56	67
Parker County	NA	96	113	128
Tarrant County	NA	2,895	3,026	3,165
Benbrook	NA	84	90	90
Fort Worth	NA	1,929	1,989	2,057
(on base)	NA	537	537	537
(off base)	NA	1,392	1,452	1,520
Lake Worth	NA	3	3	3
River Oaks	NA	38	38	41
Sansom Park	NA	17	17	17
Westover Hills	NA	3	3	3
Westworth Village	NA	252	252	252
(on base)	NA	145	145	145
(off base)	NA	107	107	107
White Settlement	NA	81	87	87
Rest of County	NA	488	547	615
ROI Total	NA	3,038	3,195	3,360
<b>Total ROI Population</b>				
Johnson County	110,182	120,786	132,005	152,756
Parker County	73,040	79,979	87,271	100,765
Tarrant County	1,253,125	1,332,821	1,418,234	1,582,152
Benbrook	19,314	25,674	30,928	44,790
Fort Worth	442,499	496,725	536,077	624,147
(on base)	0	537	537	537
(off base)	442,499	496,188	535,540	623,610
Lake Worth	4,587	4,731	4,836	5,054
River Oaks	6,228	6,101	5,957	5,681
Sansom Park	3,785	3,805	3,808	3,815
Westover Hills	659	663	663	664
Westworth Village	582	870	870	870
(on base)	0	145	145	145
(off base)	582	725	725	725
White Settlement	14,419	16,439	17,656	20,340
Rest of County	761,052	777,813	817,439	876,791
ROI Total	1,436,347	1,533,586	1,637,510	1,835,673

Note: (a) Closure conditions.

NA = Not applicable.

ROI = Region of Influence.

**4.3.2.3 ROI Population with the Proposed Action.** Under the Proposed Action, the ROI population is projected to increase to 1,533,586 persons by 1998 and 1,835,673 persons by the year 2013. This represents an increase of 0.2 percent over closure conditions and an increase of less than 0.1 percent over the No-Action/Realignment Alternative in the year 2013 (see Table 4.3-4). The average annual growth rate in ROI population between 1993 and the year 2013 would be 1.2 percent, the same as under both closure conditions and the No-Action/Realignment Alternative.



### **4.3.3 Mixed Use Alternative**

**4.3.3.1 Site-Related Population.** Under this alternative, the total site-related population is projected to reach 36,081 persons in 1998. By 2013, site-related population would be 70,352 persons. This represents an increase of 67,508 persons or 2,374 percent over closure conditions and an increase of 57,417 persons or 444 percent over the No-Action/Realignment Alternative in 2013 (Table 4.3-5). Of the total site-related population, the civilian reuse activities contribute 23,092 persons in 1998 and 57,695 persons in 2013. The communities expected to accommodate the greatest site-related population by the year 2013 include Fort Worth (26,615 persons off base), Benbrook (1,002 persons), White Settlement (955 persons), and Westworth Village (327 persons off base).

**4.3.3.2 Migratory-Related Population.** The total migratory population is projected to reach 3,230 persons in 1998 and 3,774 persons in 2013. This represents an increase of 902 persons or 31.4 percent over the No-Action/Realignment Alternative in 2013 (Table 4.3-6). The difference (902) is the civilian reuse portion of the total in-migrating population, an increase from 355 persons in 1998. The communities projected to accommodate the largest migratory population by the year 2013 include Fort Worth (2,225 persons, of which 1,688 persons would reside off base), Westworth Village (255 persons, of which 110 persons would live off base), Benbrook (99 persons), and White Settlement (93 persons).

**4.3.3.3 ROI Population with the Mixed Use Alternative.** Under the Mixed Use Alternative, the ROI population is projected to increase to 1,533,778 persons in 1998 and to 1,836,087 persons by the year 2013. This represents an increase of 0.2 percent over closure conditions and an increase of less than 0.1 percent over the No-Action/Realignment Alternative in 2013 (see Table 4.3-6). The average annual growth rate in ROI population, between 1993 and 2013, would be 1.2 percent, the same as both closure conditions and the No-Action/Realignment Alternative.

## **4.4 HOUSING**

Total housing demand in the ROI is estimated to be 565,406 units at closure. Closure housing demand is projected to increase to 636,396 units in 1998 and 761,465 in the year 2013. This represents an average annual growth rate of 1.5 percent for the 20-year period.

Persons projected to in-migrate to the region due to employment opportunities associated with implementation of the realignment action and reuse alternatives would require housing. A level of housing unit demand is estimated for these in-migrating persons (military and civilian). How this in-migration would affect the size of the housing stock is uncertain. It is possible that the in-migrating households could occupy vacant units upon

Table 4.3-5. Site-Related Population: Mixed Use Alternative

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Persons by Labor Category</b>				
Civilian Reuse	NA	23,092	34,010	57,695
Direct	NA	10,173	14,841	25,115
Construction	NA	982	568	415
Operations	NA	9,191	14,273	24,700
Secondary	NA	12,919	19,169	32,580
Military Reuse	2,844	12,989	12,657	12,657
Direct	1,284	4,372	4,372	4,372
Secondary	1,560	8,617	8,285	8,285
Total	2,844	36,081	46,667	70,352
<b>Persons by Location: Civilian Reuse</b>				
Johnson County	NA	1,649	2,426	4,122
Parker County	NA	2,108	3,086	5,232
Tarrant County	NA	19,335	28,498	48,341
Benbrook	NA	312	460	784
Fort Worth	NA	8,709	12,809	21,730
Lake Worth	NA	76	111	186
River Oaks	NA	125	184	314
Sansom Park	NA	80	120	208
Westover Hills	NA	30	37	66
Westworth Village	NA	72	110	188
White Settlement	NA	301	442	749
Rest of County	NA	9,630	14,225	24,116
ROI Total	NA	23,092	34,010	57,695
<b>Persons by Location: Military Reuse</b>				
Johnson County	177	779	754	754
Parker County	342	878	862	862
Tarrant County	2,371	11,332	11,041	11,041
Benbrook	41	223	218	218
Fort Worth	1,235	5,530	5,422	5,422
Lake Worth	9	38	35	35
River Oaks	9	92	90	90
Sansom Park	19	58	58	58
Westover Hills	10	14	14	14
Westworth Village	5	264	284	284
White Settlement	12	208	206	206
Rest of County	1,031	4,885	4,714	4,714
ROI Total	2,844	12,989	12,657	12,657
<b>Persons by Location: Total</b>				
Johnson County	177	2,428	3,180	4,876
Parker County	342	2,986	3,948	6,094
Tarrant County	2,371	30,667	39,539	59,382
Benbrook	41	535	678	1,002
Fort Worth	1,235	14,239	18,231	27,152
Lake Worth	9	114	146	221
River Oaks	9	217	274	404
Sansom Park	19	138	178	266
Westover Hills	10	44	51	80
Westworth Village	5	356	394	472
White Settlement	12	509	648	955
Rest of County	1,031	14,515	18,939	28,830
ROI Total	2,844	36,081	46,667	70,352

Note: (a) 1993 = Closure conditions.

NA = Not applicable.

ROI = Region of Influence.

**Table 4.3-6. Regional Population Effects: Mixed Use Alternative**  
**Page 1 of 2**

	1993 <sup>(a)</sup>	1998	2003	2013
<b>Post-Closure ROI Population</b>				
Johnson County	110,182	120,739	131,949	152,689
Parker County	73,040	79,883	87,158	100,637
Tarrant County	1,253,125	1,329,926	1,415,208	1,578,987
Benbrook	19,314	25,590	30,838	44,700
Fort Worth	442,499	494,796	534,088	622,090
(on base)	0	0	0	0
(off base)	442,499	494,796	534,088	622,090
Lake Worth	4,587	4,728	4,833	5,051
River Oaks	6,228	6,063	5,919	5,640
Sansom Park	3,785	3,788	3,791	3,798
Westover Hills	659	660	660	661
Westworth Village	582	618	618	618
(on base)	0	0	0	0
(off base)	582	618	618	618
White Settlement	14,419	16,358	17,569	20,253
Rest of County	761,052	777,325	816,892	876,176
ROI Total	1,436,347	1,530,548	1,634,315	1,832,313
<b>Migratory-Related Population Changes: Civilian Reuse</b>				
Johnson County	NA	21	35	58
Parker County	NA	32	53	87
Tarrant County	NA	302	441	757
Benbrook	NA	6	9	15
Fort Worth	NA	142	211	363
Lake Worth	NA	0	0	3
River Oaks	NA	0	3	6
Sansom Park	NA	0	0	3
Westover Hills	NA	0	0	0
Westworth Village	NA	0	0	3
White Settlement	NA	6	9	12
Rest of County	NA	148	209	352
ROI Total	NA	355	529	902
<b>Migratory-Related Population Changes: Military Reuse</b>				
Johnson County	NA	35	35	35
Parker County	NA	81	81	81
Tarrant County	NA	2,759	2,756	2,756
Benbrook	NA	84	84	84
Fort Worth	NA	1,862	1,862	1,862
(on base)	NA	537	537	537
(off base)	NA	1,325	1,325	1,325
Lake Worth	NA	3	3	3
River Oaks	NA	38	38	38
Sansom Park	NA	17	17	17
Westover Hills	NA	3	3	3
Westworth Village	NA	252	252	252
(on base)	NA	145	145	145
(off base)	NA	107	107	107
White Settlement	NA	81	81	81
Rest of County	NA	419	416	416
ROI Total	NA	2,875	2,872	2,872

Note: (a) 1993 = Closure conditions.  
NA = Not applicable.  
ROI = Region of Influence.

**Table 4.3-6. Regional Population Effects: Mixed Use Alternative**  
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	1993 <sup>(a)</sup>	1998	2003	2013
<b>Migratory-Related Population Changes: Total</b>				
Johnson County	NA	56	70	93
Parker County	NA	113	134	168
Tarrant County	NA	3,061	3,197	3,513
Benbrook	NA	90	93	99
Fort Worth	NA	2,004	2,073	2,225
(on base)	NA	537	537	537
(off base)	NA	1,467	1,536	1,688
Lake Worth	NA	3	3	6
River Oaks	NA	38	41	44
Sansom Park	NA	17	17	20
Westover Hills	NA	3	3	3
Westworth Village	NA	252	252	255
(on base)	NA	145	145	145
(off base)	NA	107	107	110
White Settlement	NA	87	90	93
Rest of County	NA	567	625	768
ROI Total	NA	3,230	3,401	3,774
<b>Total ROI Population</b>				
Johnson County	110,182	120,795	132,019	152,782
Parker County	73,040	79,996	87,292	100,805
Tarrant County	1,253,125	1,332,987	1,418,405	1,582,500
Benbrook	19,314	25,680	30,931	44,799
Fort Worth	442,499	496,800	536,161	624,315
(on base)	0	537	537	537
(off base)	442,499	496,263	535,624	623,778
Lake Worth	4,587	4,731	4,836	5,057
River Oaks	6,228	6,101	5,960	5,684
Sansom Park	3,785	3,805	3,808	3,818
Westover Hills	659	663	663	664
Westworth Village	582	870	870	873
(on base)	0	145	145	145
(off base)	582	725	725	728
White Settlement	14,419	16,445	17,659	20,346
Rest of County	761,052	777,892	817,517	876,944
ROI Total	1,436,347	1,533,778	1,637,716	1,836,087

Note: (a) 1993 = Closure conditions.

NA = Not applicable.

ROI = Region of Influence.

arrival in the region, and no new units would be added to the housing stock. Conversely, the new households could demand, and occupy, new housing units. Therefore, the resulting new construction would increase the housing stock in the ROI. The latter assumption has been made and is reflected in the data presented in housing tables for each of the alternatives.

It is proposed under all alternatives that both military family housing and dormitory accommodations would be available within the retained military area to be occupied by in-migrating active duty military personnel and their families. Within NAS Fort Worth, there would be 9 dormitories (1,286-person capacity) and 128 military family housing units that were in

existence prior to closure of Carswell AFB. All of the dormitories and 78 housing units are in the portion of the base located within Fort Worth, with the remaining 50 housing units located within Westworth Village. For analysis purposes, it is assumed that all military family housing units would be occupied. Further, it is assumed that NAS Fort Worth would require dormitory space to accommodate 311 active-duty personnel, which is approximately 24 percent of the total dormitory capacity. When combined, the total number of both dormitory space and housing units demanded in Fort Worth would be 389, and 50 in Westworth Village.

Housing demand under the Proposed Action and the Mixed Use Alternative are related to the number of in-migrating families associated with both the military and nonmilitary components of the reuse activity. The demand for housing associated with the military component of these two alternatives is identical to that projected for the No-Action/Realignment Alternative, as is the on-base housing demand.

The number of off-base housing units occupied by in-migrating families (military and civilian) in the year 2013 would number 756 units under the No-Action/Realignment Alternative. Under the Proposed Action the total number of units would be 924 and under the Mixed Use Alternative it would rise to 1,067 units. The greatest demand for housing in the ROI is expected to occur under the Mixed Use Alternative.

#### **4.4.1 No-Action/Realignment Alternative**

**Migratory-Related Housing Demand.** Housing demand caused by population in-migration to the ROI associated with the No-Action/Realignment Alternative is projected to be 1,196 units in 1998 and 1,195 in the year 2013 (Table 4.4-1). The reduction beyond 1998 would be due to the completion of construction activities in 1998. By 2013, the communities with the greatest share of the migratory-related housing demand include Fort Worth (846 units or 70.8 percent of the total) and Westworth Village (87 units or 7.3 percent of the total).

In the year 2013, the number of off-base housing units occupied by the in-migrating population under this alternative is projected to total 457 in Fort Worth and 37 in Westworth Village. The other communities are expected to experience a demand for off-base housing of less than 30 units each.

**ROI Housing Demand with the No-Action/Realignment Alternative.** ROI housing demand with the No-Action/Realignment Alternative is projected to increase to 637,592 units in 1998 and 762,660 units in the year 2013. In 2013, this would be an increase of 0.2 percent over closure conditions. This rate of increase in housing demand averages 1.5 percent per year for the 20-year analysis period, the same as under closure conditions.

**Table 4.4-1. Regional Housing Effects Counties and Selected Communities:  
No-Action/Realignment Alternative**

	1998	2003	2013
<b>Post-Closure ROI Housing Demand</b>			
Johnson County	46,015	50,287	58,191
Parker County	32,112	35,036	40,455
Tarrant County (with base)	558,269	594,068	662,819
Benbrook	10,957	13,204	19,140
Fort Worth	214,915	231,982	270,206
(on base)	0	0	0
(off base)	214,915	231,982	270,206
Lake Worth	1,831	1,872	1,956
River Oaks	2,874	2,874	2,874
Sansom Park	1,482	1,482	1,482
Westover Hills	267	267	267
Westworth Village	1,133	1,133	1,133
(on base)	0	0	0
(off base)	1,133	1,133	1,133
White Settlement	6,520	7,003	8,073
Rest of County	318,290	334,251	357,688
ROI Total	636,396	679,391	761,465
<b>Migratory-Related Housing Demand</b>			
Johnson County	12	12	12
Parker County	28	28	28
Tarrant County (with base)	1,156	1,155	1,155
Benbrook	29	29	29
Fort Worth	846	846	846
(on base)	389	389	389
(off base)	457	457	457
Lake Worth	1	1	1
River Oaks	13	13	13
Sansom Park	6	6	6
Westover Hills	1	1	1
Westworth Village	87	87	87
(on base)	50	50	50
(off base)	37	37	37
White Settlement	28	28	28
Rest of County	145	144	144
ROI Total	1,196	1,195	1,195
<b>Total Housing Demand</b>			
Johnson County	46,027	50,299	58,203
Parker County	32,140	35,064	40,483
Tarrant County (with base)	559,425	595,223	663,974
Benbrook	10,986	13,233	19,169
Fort Worth	215,761	232,828	271,052
(on base)	389	389	389
(off base)	215,372	232,439	270,663
Lake Worth	1,832	1,873	1,957
River Oaks	2,887	2,887	2,887
Sansom Park	1,488	1,488	1,488
Westover Hills	268	268	268
Westworth Village	1,220	1,220	1,220
(on base)	50	50	50
(off base)	1,170	1,170	1,170
White Settlement	6,548	7,031	8,101
Rest of County	318,435	334,395	357,832
ROI Total	637,592	680,586	762,660

ROI = Region of Influence.

#### **4.4.2 Proposed Action**

**Migratory-Related Housing Demand.** The total migratory-related housing demand under the Proposed Action is projected to reach 1,252 units in 1998 and 1,363 in the year 2013 (Table 4.4-2). The civilian reuse share of these totals are 56 and 168 units in 1998 and 2013, respectively. In 2013, this is a 14 percent increase over the No-Action/Realignment Alternative. Fort Worth is expected to experience the greatest demand for housing by the year 2013 with 913 units (67.0 percent of the total), of which 524 units would be located off base. In Westworth Village, there would be a demand for 87 units (6.4 percent of the total), of which 37 units would be located off base.

**ROI Housing Demand with the Proposed Action.** ROI demand with the Proposed Action is projected to increase to 637,648 units in 1998 and 762,828 in the year 2013. This rate of increase in housing demand averages 1.5 percent per year for the 20-year analysis period, which is the same as under closure conditions and the No-Action/Realignment Alternative.

#### **4.4.3 Mixed Use Alternative**

**Migratory-Related Housing Demand.** The total migratory-related housing demand is projected to reach 1,318 units in 1998 and 1,506 in the year 2013 (Table 4.4-3). The civilian reuse share of these totals is 122 units in 1998 and 311 units in the year 2013. In 2013, this would be an increase of 26 percent over the No-Action/Realignment Alternative. Fort Worth is expected to experience the greatest demand for housing by 2013 with 971 units (64.5 percent of the total), of which 582 units would be off base. In Westworth Village, there would be a demand for 88 units (5.8 percent of the total), of which 38 units would be located off base.

**ROI Housing Demand with the Mixed Use Alternative.** ROI housing demand under the Mixed Use Alternative is projected to increase to 637,714 units in 1998 and 762,971 in the year 2013. In 2013, this would be an increase of 0.2 percent over closure conditions, and less than 0.1 percent over the No-Action/Realignment Alternative. This rate of increase in housing demand averages 1.5 percent per year for the 20-year period, the same as under closure conditions and the No-Action/Realignment Alternative.

### **4.5 PUBLIC SERVICES**

Effects to key local public services are determined by the change in demand for personnel and facilities arising from implementation of the military realignment and the reuse alternatives. The ability to accommodate increased demand or to respond to decreases in demand while maintaining accustomed levels of public service is examined based on potential changes in demand for services.

**Table 4.4-2. Regional Housing Effects Counties and Selected Communities: Proposed Action**  
**Page 1 of 2**

	1998	2003	2013
<b>Post-Closure ROI Housing Demand</b>			
Johnson County	46,015	50,287	58,191
Parker County	32,112	35,036	40,455
Tarrant County (with base)	558,269	594,068	662,819
Benbrook	10,957	13,204	19,140
Fort Worth	214,915	231,982	270,206
(on base)	0	0	0
(off base)	214,915	231,982	270,206
Lake Worth	1,831	1,872	1,956
River Oaks	2,874	2,874	2,874
Sansom Park	1,482	1,482	1,482
Westover Hills	267	267	267
Westworth Village	1,133	1,133	1,133
(on base)	0	0	0
(off base)	1,133	1,133	1,133
White Settlement	6,520	7,003	8,073
Rest of County	318,290	334,251	357,688
ROI Total	636,396	679,391	761,465
<b>Migratory-Related Housing Demand: Civilian Reuse</b>			
Johnson County	4	7	11
Parker County	5	11	16
Tarrant County	47	93	141
Benbrook	0	2	2
Fort Worth	23	44	67
Lake Worth	0	0	0
River Oaks	0	0	1
Sansom Park	0	0	0
Westover Hills	0	0	0
Westworth Village	0	0	0
White Settlement	0	2	2
Rest of County	24	45	69
ROI Total	56	111	168
<b>Migratory-Related Housing Demand: Military Reuse</b>			
Johnson County	12	12	12
Parker County	28	28	28
Tarrant County (with base)	1,156	1,155	1,155
Benbrook	29	29	29
Fort Worth	846	846	846
(on base)	389	389	389
(off base)	457	457	457
Lake Worth	1	1	1
River Oaks	13	13	13
Sansom Park	6	6	6
Westover Hills	1	1	1
Westworth Village	87	87	87
(on base)	50	50	50
(off base)	37	37	37
White Settlement	28	28	28
Rest of County	145	144	144
ROI Total	1,196	1,195	1,195

ROI = Region of Influence.



**Table 4.4-2. Regional Housing Effects Counties and Selected Communities: Proposed Action**  
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	1998	2003	2013
<b>Migratory-Related Housing Demand: Total</b>			
Johnson County	16	19	23
Parker County	33	39	44
Tarrant County (with base)	1,203	1,248	1,296
Benbrook	29	31	31
Fort Worth	869	890	913
(on base)	389	389	389
(off base)	480	501	524
Lake Worth	1	1	1
River Oaks	13	13	14
Sansom Park	6	6	6
Westover Hills	1	1	1
Westworth Village	87	87	87
(on base)	50	50	50
(off base)	37	37	37
White Settlement	28	30	30
Rest of County	169	189	213
ROI Total	1,252	1,306	1,363
<b>Total Housing Demand with Reuse</b>			
Johnson County	46,031	50,306	58,214
Parker County	32,145	35,075	40,499
Tarrant County (with base)	559,472	595,316	664,115
Benbrook	10,986	13,235	19,171
Fort Worth	215,784	232,872	271,119
(on base)	389	389	389
(off base)	215,395	232,483	270,730
Lake Worth	1,832	1,873	1,957
River Oaks	2,887	2,887	2,888
Sansom Park	1,488	1,488	1,488
Westover Hills	268	268	268
Westworth Village	1,220	1,220	1,220
(on base)	50	50	50
(off base)	1,170	1,170	1,170
White Settlement	6,548	7,033	8,103
Rest of County	318,459	334,440	357,901
ROI Total	637,648	680,697	762,828

ROI = Region of Influence.

Public services would be affected by ROI population in-migration and consequent changes in public service demand. The number of off-base, in-migrating workers, their accompanying dependents, and their settlement patterns would affect public service demand and corresponding service provisions throughout the ROI. Preclosure per capita-generated demand for public services (student/teacher ratios and employees per 1,000 population served ratios) is used as a standard of service. Potential reuse effects are determined by the necessary addition of public service employees (e.g., local government employees, teachers, police officers, fire fighters) needed to serve the in-migrating population.

**Table 4.4-3. Regional Housing Effects Counties and Selected Communities:  
Mixed Use Alternative  
Page 1 of 2**

	1998	2003	2013
<b>Post-Closure ROI Housing Demand</b>			
Johnson County	46,015	50,287	58,191
Parker County	32,112	35,036	40,455
Tarrant County (with base)	558,269	594,068	662,819
Benbrook	10,957	13,204	19,140
Fort Worth	214,915	231,982	270,206
(on base)	0	0	0
(off base)	214,915	231,982	270,206
Lake Worth	1,831	1,872	1,956
River Oaks	2,874	2,874	2,874
Sansom Park	1,482	1,482	1,482
Westover Hills	267	267	267
Westworth Village	1,133	1,133	1,133
(on base)	0	0	0
(off base)	1,133	1,133	1,133
White Settlement	6,520	7,003	8,073
Rest of County	318,290	334,251	357,688
ROI Total	636,396	679,391	761,465
<b>Migratory-Related Housing Demand: Civilian Reuse</b>			
Johnson County	7	12	20
Parker County	11	18	30
Tarrant County	104	152	261
Benbrook	2	3	5
Fort Worth	49	73	125
Lake Worth	0	0	1
River Oaks	0	1	2
Sansom Park	0	0	1
Westover Hills	0	0	0
Westworth Village	0	0	1
White Settlement	2	3	4
Rest of County	51	72	122
ROI Total	122	182	311
<b>Migratory-Related Housing Demand: Military Reuse</b>			
Johnson County	12	12	12
Parker County	28	28	28
Tarrant County (with base)	1,156	1,155	1,155
Benbrook	29	29	29
Fort Worth	846	846	846
(on base)	389	389	389
(off base)	457	457	457
Lake Worth	1	1	1
River Oaks	13	13	13
Sansom Park	6	6	6
Westover Hills	1	1	1
Westworth Village	87	87	87
(on base)	50	50	50
(off base)	37	37	37
White Settlement	28	28	28
Rest of County	145	144	144
ROI Total	1,196	1,195	1,195

ROI = Region of Influence.

**Table 4.4-3. Regional Housing Effects Counties and Selected Communities:  
Mixed Use Alternative  
Page 2 of 2**

	1998	2003	2013
<b>Migratory-Related Housing Demand: Total</b>			
Johnson County	19	24	32
Parker County	39	46	58
Tarrant County (with base)	1,260	1,307	1,416
Benbrook	31	32	34
Fort Worth	895	919	971
(on base)	389	389	389
(off base)	506	530	582
Lake Worth	1	1	2
River Oaks	13	14	15
Sansom Park	6	6	7
Westover Hills	1	1	1
Westworth Village	87	87	88
(on base)	50	50	50
(off base)	37	37	38
White Settlement	30	31	32
Rest of County	196	216	266
ROI Total	1,318	1,377	1,506
<b>Total Housing Demand with Reuse</b>			
Johnson County	46,034	50,311	58,223
Parker County	32,151	35,082	40,513
Tarrant County (with base)	559,529	595,375	664,235
Benbrook	10,988	13,236	19,174
Fort Worth	215,810	232,901	271,177
(on base)	389	389	389
(off base)	215,421	232,512	270,788
Lake Worth	1,832	1,873	1,958
River Oaks	2,887	2,888	2,889
Sansom Park	1,488	1,488	1,489
Westover Hills	268	268	268
Westworth Village	1,220	1,220	1,221
(on base)	50	50	50
(off base)	1,170	1,170	1,171
White Settlement	6,550	7,034	8,105
Rest of County	318,486	334,467	357,954
ROI Total	637,714	680,768	762,971

ROI = Region of Influence.

These staffing-to-population service ratios are used to compare effects between the alternatives only, and are not intended to suggest future staffing requirements. In some cases, a jurisdiction may maintain the same staff level, resulting in a lower level of service ratio.

Other direct effects would include increased service demand on local governments from the additional area and infrastructure of portions of Carswell AFB being shifted from federal to local administration (area-generated levels of public service). Following disposition to the private sector of any parcels of land that are determined to be excess property, the

communities of Fort Worth, Westworth Village, and White Settlement or unincorporated Tarrant County may become responsible for servicing the additional demand for government services, police protection, and fire protection within their jurisdiction. Local service providers would retain Navy support in the form of informal mutual aid agreements for fire protection services. The population living on base would receive public services primarily from the Navy. It is projected that 682 persons will reside on base, of which 537 persons would be in Fort Worth and 145 persons in Westworth Village. Area-generated demand effects apply only to the Proposed Action and the Mixed Use Alternative.

The text only presents effects for jurisdictions that are projected to experience increases in staffing attributable to population in-migration. Additionally, the text presents effects only for the year 2013 for the alternatives. The effects for 1998 and the year 2003 are provided in the appropriate tables.

#### **4.5.1 Local Government**

Potential effects to local government structure and employment are examined for each alternative. The analysis considers project-related population in-migration and changes to service areas under each alternative. Because of the magnitude of some effects of reuse, level-of-service ratios may not adequately meet new service requirements. Changes in types of services to be provided were considered.

**Area-Generated Demand.** Under both reuse alternatives, portions of the disposed property would revert to the appropriate jurisdictions. The base property is located within the communities of Fort Worth, Westworth Village, and White Settlement and in unincorporated Tarrant County. Administration of the entire site, or portions thereof, would become the responsibility of these jurisdictions during civilian reuse. Infrastructure requirements and services, such as public works, utilities, building code inspection and enforcement and recreation, may need to be expanded for the additional area that might come under local jurisdiction. Regardless of migratory-related population, increases in employment and facilities infrastructure may be required to serve these areas. Therefore, the total local government employee demands would be the summation of per capita demands and area-generated demands.

The base property that falls within Tarrant County would increase the county's service area by 1.1 square miles under the Proposed Action and 1.2 square miles under the Mixed Use Alternative. When the area-generated level-of-service ratio of 3.9 employees per square mile is applied to these additional areas, there could be a requirement for four additional employees under the Proposed Action and five additional employees under the Mixed Use Alternative.

The base property that falls within Fort Worth would increase the city's service area by 0.1 square mile under the Proposed Action and 0.2 square mile under the Mixed Use Alternative. When the area-generated level-of-service ratio of 17.8 employees per square mile is applied to these additional areas, there could be a requirement for two and four additional employees, respectively.

The base property that falls within Westworth Village would increase the city's service area by 0.6 square mile under both reuse alternatives. When the area-generated level-of-service ratio of 5.2 employees per square mile is applied to these additional areas, there could be a requirement for three additional employees.

The base property that falls within the local jurisdiction of White Settlement would increase the city's service area by 0.1 square mile under both reuse alternatives. When the area-generated level-of-service ratio of 16.7 employees per square mile is applied to this additional area, there could be a requirement for two additional employees.

#### 4.5.1.1 No-Action/Realignment Alternative

**Tarrant County.** Tarrant County would experience an off-base population increase due to in-migration of 2,077 persons by 1998 and 2,074 persons by 2013. To maintain the per-capita service level of 2.7 government employees per 1,000 persons, an increase in local government employment of 6 persons is anticipated by the year 2013, an increase of 0.2 percent over the projected closure staffing level of 3,312 (Table 4.5.1).

**Table 4.5-1. Government Employment Effects:  
No-Action/Realignment Alternative**

Jurisdiction	1998	2003	2013
Tarrant County	6	6	6
Fort Worth	15	15	15
Westworth Village	1	1	1
<b>Total</b>	<b>22</b>	<b>22</b>	<b>22</b>

**Note:** Effects of migratory-related off-base population changes on local government employment requirements are shown cumulatively and do not include area-generated demand. Only those communities projected to experience effects associated with population in-migration attributable to this alternative are included in the table. Effects are rounded to the nearest whole employee.

**City of Fort Worth.** Fort Worth would experience an off-base population increase due to in-migration of 1,325 persons by 1998, which would remain unchanged by 2013. To maintain the per capita service level of 11.6 government employees per 1,000 persons, an increase in local government

employment of 15 positions is anticipated by the year 2013, an increase of 0.3 percent over the closure staffing level of 5,135.

**City of Westworth Village.** Westworth Village would experience an off-base population increase due to in-migration of 107 persons by 1998, which would remain unchanged by 2013. To maintain the per capita service level of 5.6 government employees per 1,000 persons, an increase in local government employment of one position is anticipated by the year 2013, an increase of 12.5 percent over the closure staffing level of eight employees.

#### **4.5.1.2 Proposed Action**

**Tarrant County.** Tarrant County would experience an off-base population increase due to in-migration of 136 persons by 1998 and 409 persons by 2013 over the No-Action/Realignment Alternative. To maintain the per capita service level, an increase in local government employment of seven positions is anticipated by the year 2013, an increase of one position over the No-Action/Realignment Alternative (Table 4.5.2). This one position would be a less than 0.1 percent increase over the closure staffing level, and 16.7 percent over that associated with the No-Action/Realignment Alternative.

**City of Fort Worth.** Fort Worth would experience a population increase due to in-migration of 67 persons by 1998 and 195 persons by 2013 over the No-Action/Realignment Alternative. To maintain the per capita service level, an increase in local government employment of 17 positions is anticipated by the year 2013, an increase of two positions over the No-Action/Realignment Alternative (see Table 4.5.2). This would be a less than 0.1 percent increase over the closure staffing level, and 13.3 percent over that associated with the No-Action/Realignment Alternative.

**City of Westworth Village.** Westworth Village would not experience a civilian reuse-related population increase, over the No-Action/Realignment Alternative and, therefore, there would be no effects on local government services by the year 2013.

#### **4.5.1.3 Mixed Use Alternative**

**Tarrant County.** Tarrant County would experience a population increase due to in-migration of 302 persons by 1998 and 757 persons by 2013 over the No-Action/Realignment Alternative. To maintain the per capita service level, an increase in local government employment of eight positions is anticipated by the year 2013, an increase of two positions over the No-Action/Realignment Alternative (Table 4.5.3). These two positions would be less than a 0.1 percent increase over the closure staffing level and a 33.3 percent increase over the No-Action/Realignment Alternative.

**Table 4.5-2. Government Employment Effects: Proposed Action**

<b>Jurisdiction</b>	<b>1998</b>	<b>2003</b>	<b>2013</b>
<b>Tarrant County</b>	7 <sup>(a)</sup>	7	7
Military	6	6	6
Civilian	0	1	1
<b>Fort Worth</b>	16	17	17
Military	15	15	15
Civilian	1	2	2
<b>Westworth Village</b>	1	1	1
Military	1	1	1
Civilian	0	0	0
<b>Total</b>	<b>24</b>	<b>25</b>	<b>25</b>

**Note:** Effects of migratory-related off-base population changes on local government employment requirements are shown cumulatively and do not include area-generated demand. Only those communities projected to experience effects associated with population in-migration attributable to this alternative are included in the table. Effects are rounded to the nearest whole employee.

(a) When considered separately, civilian reuse effects are zero. When combined, the effect is one additional employee.

**City of Fort Worth.** Fort Worth would experience a population increase due to in-migration of 142 persons by 1998 and 363 persons by 2013 over the No-Action/Realignment Alternative. To maintain the per capita service level, an increase in local government employment of 19 positions is anticipated by the year 2013 and an increase of four positions over the No-Action/Realignment Alternative (see Table 4.5.3). This increase would be less than a 0.1 percent increase over the closure staffing level, and an increase of 26.7 percent over that associated with the No-Action/Realignment Alternative.

**City of Westworth Village.** Westworth Village would experience minimal in-migration; thus, there would be no local government effects by the year 2013 over the No-Action/Realignment Alternative.

#### **4.5.2 Public Education**

Potential effects to educational services and facilities are examined for each alternative. The analysis considers migratory-related population changes and their effect on local enrollments and teaching staff levels.

Facility capacities for school districts in the ROI under closure conditions are expected to be at capacity in some cases. The projected increase in migratory-related student enrollments resulting from the three alternatives would not offset enrollment losses anticipated as a result of closure, with the exception of Castleberry ISD.

**Table 4.5-3. Government Employment Effects: Mixed Use Alternative**

<b>Jurisdiction</b>	<b>1998</b>	<b>2003</b>	<b>2013</b>
<b>Tarrant County</b>	7	7	8
Military	6	6	6
Civilian	1	1	2
<b>Fort Worth</b>	17	18	19
Military	15	15	15
Civilian	2	3	4
<b>Westworth Village</b>	1	1	1
Military	1	1	1
Civilian	0	0	0
<b>Total</b>	23	26	28

**Note:** Effects of migratory-related off-base population changes on local government employment requirements are shown cumulatively and do not include area-generated demand. Only those communities projected to experience effects associated with population in-migration attributable to this alternative are included in the table. Effects are rounded to the nearest whole employee.

#### **4.5.2.1 No-Action/Realignment Alternative**

**Castleberry ISD.** Student enrollments in the Castleberry ISD are projected to increase by 32 in 1998 and remain at this level by the year 2013 (Table 4.5-4). This would be a 1.1 percent increase over the closure enrollment of 2,831. Enrollment increases due to the No-Action/Realignment Alternative would require an increase in teaching staff of two positions in 1998 and remain at this level by the year 2013. This would be an increase of approximately 1.2 percent over the closure staffing level of 168 staff.

**Fort Worth ISD.** Student enrollments in the Fort Worth ISD are projected to increase by 227 in 1998 and remain at this level by 2013 (see Table 4.5-4). This would be a 0.3 percent increase over the closure enrollment of 67,290. Enrollment increases due to the No-Action/Realignment Alternative would require an increase in teaching staff of 15 positions in 1998 and remain at this level by the year 2013. This would be an increase of approximately 0.3 percent over the closure staffing level of 4,503.

**Lake Worth ISD.** Student enrollments are projected to increase by nine in 1998 and remain at this level by 2013 (see Table 4.5-4). This would be an 0.8 percent increase over the closure enrollment of 1,398. Enrollment increases due to the No-Action/Realignment Alternative would require an increase in teaching staff of one position in 1998 and remain at this level by the year 2013. This would be an increase of approximately 1.1 percent over the closure staffing level of 93.



**Table 4.5-4. Enrollment and Teaching Staff Effects:  
No-Action/Realignment Alternative**

	1998	2003	2013
<b>Student Enrollment Effects</b>			
Castleberry ISD	32	32	32
Fort Worth ISD	227	227	227
Lake Worth ISD	9	9	9
White Settlement ISD	13	13	13
<b>Total</b>	<b>281</b>	<b>281</b>	<b>281</b>
<b>Teaching Staff Effects</b>			
Castleberry ISD	2	2	2
Fort Worth ISD	15	15	15
Lake Worth ISD	1	1	1
White Settlement ISD	1	1	1
<b>Total</b>	<b>19</b>	<b>19</b>	<b>19</b>

**Note:** Effects of migratory-related population changes on student enrollments and teaching staff are shown cumulatively and are rounded to the nearest whole person.  
ISD = Independent School District.

**White Settlement ISD.** Student enrollments are projected to increase by 13 in 1998 and remain at this level by 2013 (see Table 4.5-4). This would be a 0.3 percent increase over the closure enrollment of 3,815. Enrollment increases due to the No-Action/Realignment Alternative would require an increase in teaching staff of one position in 1998 and remain at this level by the year 2013. This would be an increase of approximately 0.5 percent over the closure staffing level of 217.

#### **4.5.2.2 Proposed Action**

**Castleberry ISD.** Student enrollment effects in the Castleberry ISD are zero in 1998 and one by the year 2013 over the No-Action/Realignment Alternative (Table 4.5-5). This would be an increase of less than 0.1 percent over the closure enrollment and a 3.1 percent increase over that associated with the No-Action/Realignment Alternative. Enrollment increases due to the Proposed Action would not require an increase in teaching staff by 2013 over the No-Action/Realignment Alternative.

**Fort Worth ISD.** Student enrollments in the Fort Worth ISD are projected to increase by 7 in 1998 and 23 by the year 2013 over the No-Action/Realignment Alternative (see Table 4.5-5). This would be an 0.8 percent increase over the closure enrollment, and a 10.1 percent increase over that associated with the No-Action/Realignment Alternative. Enrollment due to

**Table 4.5-5. Enrollment and Teaching Staff Effects: Proposed Action**

	1998	2003	2013
<b>Student Enrollment Effects</b>			
Castleberry ISD	32	33	33
Military Reuse	32	32	32
Civilian Reuse	0	1	1
Fort Worth ISD	234	243	250
Military Reuse	227	227	227
Civilian Reuse	7	16	23
Lake Worth ISD	9	10	10
Military Reuse	9	9	9
Civilian Reuse	0	1	1
White Settlement ISD	14	14	15
Military Reuse	13	13	13
Civilian Reuse	1	1	2
Total	289	300	308
<b>Teaching Staff Effects</b>			
Castleberry ISD	2	2	2
Military Reuse	2	2	2
Civilian Reuse	0	0	0
Fort Worth ISD	15	16	17
Military Reuse	15	15	15
Civilian Reuse	0	1	2
Lake Worth ISD	1	1	1
Military Reuse	1	1	1
Civilian Reuse	0	0	0
White Settlement ISD	1	1	1
Military Reuse	1	1	1
Civilian Reuse	0	0	0
Total	19	20	21

Notes: Effects of migratory-related population changes on student enrollments and teaching staff are shown cumulatively and are rounded to the nearest whole person.  
ISD = Independent School District.

the Proposed Action would require an increase of two positions by 2013 over the No-Action/Realignment Alternative. This would be an increase of 13.3 percent over the No-Action/Realignment Alternative and a 1.2 percent over the closure staffing level.

**Lake Worth ISD.** Student enrollment increases in the Lake Worth ISD are zero in 1998 and one by the year 2013 over the No-Action/Realignment Alternative (see Table 4.5-5). This would be less than a 0.1 percent increase over the closure enrollment and a 11.1 percent increase over that associated with the No-Action/Realignment Alternative. Enrollment increases due to the Proposed Action would not require an increase in teaching staff by the year 2013 over the No-Action/Realignment Alternative.

**White Settlement ISD.** Student enrollments in the White Settlement ISD are projected to increase by one in 1998 and two by the year 2013 over the No-Action/Realignment Alternative (see Table 4.5-5). This would be less than a 0.1 percent increase over the closure enrollment level and an increase of 15.4 percent over that associated with the No-Action/Realignment Alternative. Enrollment increases due to the Proposed Action would not require an increase in teaching staff by 2013 over the No-Action/Realignment Alternative.

#### **4.5.2.3 Mixed Use Alternative**

**Castleberry ISD.** Student enrollments are projected to increase by one in 1998 and three by the year 2013 over the No-Action/Realignment Alternative (Table 4.5-6). This would be an increase of 0.1 percent over the closure enrollment and a 9.4 percent increase over that associated with the No-Action/Realignment Alternative. Enrollment increases due to the Mixed Use Alternative would not require an increase in teaching staff 2013 over the No-Action/Realignment Alternative.

**Fort Worth ISD.** Student enrollments are projected to increase by 17 in 1998 and 44 by the year 2013 over the No-Action/Realignment Alternative (see Table 4.5-6). This would be less than a 0.1 percent increase over the closure enrollment and a 19.4 percent increase over that associated with the No-Action/Realignment Alternative. Enrollment increases due to the Mixed Use Alternative would require an increase in teaching staff of one position in 1998 and three by 2013 over the No-Action/Realignment Alternative. This would be a 20 percent increase over the No-Action/Realignment Alternative and less than a 0.1 percent increase over the closure staffing level.

**Lake Worth ISD.** Student enrollments are projected to increase by one in 1998 and three by the year 2013 over the No-Action/Realignment Alternative (see Table 4.5-6). This would be a 0.2 percent increase over the closure enrollment and a 33.3 percent increase over that associated with the No-Action/Realignment Alternative. Enrollment increases due to the Mixed

**Table 4.5-6. Enrollment and Teaching Staff Effects: Mixed Use Alternative**

	1998	2003	2013
<b>Student Enrollment Effects</b>			
Castleberry ISD	33	33	35
Military Reuse	32	32	32
Civilian Reuse	1	1	3
Fort Worth ISD	244	253	271
Military Reuse	227	227	227
Civilian Reuse	17	26	44
Lake Worth ISD	10	10	12
Military Reuse	9	9	9
Civilian Reuse	1	1	3
White Settlement ISD	14	15	16
Military Reuse	13	13	13
Civilian Reuse	1	2	3
Total	301	311	334
<b>Teaching Staff Effects</b>			
Castleberry ISD	2	2	2
Military Reuse	2	2	2
Civilian Reuse	0	0	0
Fort Worth ISD	16	17	18
Military Reuse	15	15	15
Civilian Reuse	1	2	3
Lake Worth ISD	1	1	1
Military Reuse	1	1	1
Civilian Reuse	0	0	0
White Settlement ISD	1	1	1
Military Reuse	1	1	1
Civilian Reuse	0	0	0
Total	20	21	22

**Note:** Effects of migratory-related population changes on student enrollments and teaching staff are shown cumulatively and are rounded to the nearest whole person.  
ISD = Independent School District.

Use Alternative would not require an increase in teaching staff by the year 2013 over the No-Action/Realignment Alternative.

**White Settlement ISD.** Student enrollments are projected to increase by one in 1998 and three by the year 2013 over the No-Action/Realignment Alternative (see Table 4.5-6). This would be a 0.1 percent increase over the closure enrollment and a 23.1 percent increase over that associated with the No-Action/Realignment Alternative. Enrollment increases due to the Mixed Use Alternative would not require an increase in teaching staff by the year 2013 over the No-Action/Realignment Alternative.

#### **4.5.3 Police Protection**

Under each alternative, potential effects to police protection services are examined based on the projected migratory-related population increases and changes resulting from increased public service areas. The disposed base property would become the responsibility of the appropriate jurisdictions under all reuse alternatives.

**Area-Generated Police Demands.** The portion of the off-site property that contains the Off-Site WSA is located in unincorporated Tarrant County, and could increase the area served by the Tarrant County Sheriff's Department by approximately 0.4 square mile. This additional area could result in the addition of two full-time sworn officers in order to maintain the area-generated level-of-service ratio of 4.5 full-time sworn officers per square mile.

The portion of property proposed for civilian development that falls within the city of Fort Worth could increase the area served by the Fort Worth Police Department by approximately 0.1 square mile. This additional area would not result in the addition of full-time sworn officers to the staff of the Fort Worth Police Department, which had an area-generated level-of-service ratio of 3.2 full-time sworn officers per square mile.

The portion of the excess property that falls within Westworth Village could increase the area served by the Westworth Village Police Department by approximately 0.6 square mile. This additional area would result in the addition of one full-time sworn officer to the Westworth Village Police Department in order to maintain the area-generated level-of-service ratio of 1.6 full-time sworn officers per square mile.

The civilian portion of the excess property that falls within White Settlement could increase the area served by the White Settlement Police Department by approximately 0.1 square mile. This additional area would not result in the addition of full-time sworn officers to the White Settlement Police Department, which had an area-generated level-of-service ratio of 4.2 full-time sworn officers per square mile.

The area-generated effects are the same for all communities under both reuse alternatives, with the exception of the city of Fort Worth under the Mixed Use Alternative. Under this alternative the portion of on-site property returned to the city of Fort Worth would increase from 95 acres to 110 acres, increasing the area served by the Fort Worth Police Department by 0.2 square mile. This area would result in increased staffing by one additional full-time sworn officer in order to maintain the area-generated level-of-service ratio of 3.2 full-time sworn officers per square mile.

Implementation of an alternative could result in the negotiation of new mutual-aid agreements among federal, state, county, and municipal law enforcement agencies with regard to the site. Only those communities where the municipal police departments are projected to experience increases in staffing attributable to population in-migration are discussed below.

#### **4.5.3.1 No-Action/Realignment Alternative**

**Tarrant County Sheriff's Department.** The remainder of Tarrant County (i.e., that portion of Tarrant County outside of the eight communities under analysis that do not affect the Tarrant County Sheriff's Department staffing levels) is projected to experience a population in-migration as a result of implementation of the No-Action/Realignment Alternative of 419 persons by 1998 and 416 persons by the year 2013. This increase in population would not generate additional demand for police protection from the Tarrant County Sheriff's Department in order to maintain the per capita level-of-service ratio of one full-time sworn officer per 1,000 population.

**Fort Worth Police Department.** Fort Worth is projected to experience off-base population growth due to in-migration associated with the No-Action/ Realignment Alternative of 1,325 persons by 1998 and through the year 2013. This could result in the demand for three additional full-time sworn officers by the year 2013 in order to maintain the per capita level-of-service ratio of 2.1 full-time sworn officers per 1,000 population (Table 4.5-7). This would be a 0.3 percent increase over the closure staff of 923 sworn officers.

#### **4.5.3.2 Proposed Action**

**Tarrant County Sheriff's Department.** The remainder of Tarrant County is projected to experience population in-migration of 69 persons by 1998 from the implementation of the Proposed Action over the No-Action/Realignment Alternative. This figure would increase to 199 persons by the year 2013. The growth in population would not result in an increase in demand for police protection over the No-Action/Realignment Alternative in order to maintain the per capita level of service (Table 4.5-8). However, the

**Table 4.5-7. Police Protection Effects:  
No-Action/Realignment Alternative**

	1998	2003	2013
Fort Worth Police Department	3	3	3
<b>Total</b>	<b>3</b>	<b>3</b>	<b>3</b>

**Note:** Effects of migratory-related off-base population changes on number of full-time sworn officers required are shown cumulatively and exclude area-generated effects. Only those departments projected to experience effects associated with population in-migration attributable to this alternative are included in the table. Effects are rounded to the nearest whole employee.

combined population growth of 615 persons by the year 2013 would result in one additional officer.

**Fort Worth Police Department.** Fort Worth is expected to experience a population in-migration associated with the Proposed Action of 67 persons by 1998 and 195 by the year 2013 over the No-Action/Realignment Alternative. This growth over the No-Action/Realignment Alternative would not result in the addition of full-time sworn officers in order to maintain the per capita level of service (see Table 4.5-8).

**Table 4.5-8. Police Protection Effects: Proposed Action**

	1998	2003	2013
<b>Tarrant County Sheriff's Department<sup>(a)</sup></b>	<b>0</b>	<b>1</b>	<b>1</b>
Military Reuse	0	0	0
Civilian Reuse	0	0	0
<b>Fort Worth Police Department</b>	<b>3</b>	<b>3</b>	<b>3</b>
Military Reuse	3	3	3
Civilian Reuse	0	0	0
<b>Total</b>	<b>3</b>	<b>4</b>	<b>4</b>

**Notes:** Effects of migratory-related off-base population changes on number of full-time sworn officers required are shown cumulatively and exclude area-generated effects. Only those departments projected to experience effects associated with population in-migration attributable to this alternative are included in the table. Effects are rounded to the nearest whole person.

**(a)** When considered separately, the effects of the military reuse and the civilian reuse are zero. When considered together, they result in one officer.

#### **4.5.3.3 Mixed Use Alternative**

**Tarrant County Sheriff's Department.** The remainder of Tarrant County is expected to experience an increase in population due to in-migration under the Mixed Use Alternative of 148 persons by 1998, increasing to 352 by

the year 2013 over the No-Action/Realignment Alternative. This growth in population would not result in an increase in demand for police protection to maintain the per capita level of service (Table 4.5-9). However, the combined population growth of 768 persons by 2013 would result in a demand for one additional officer.

**Table 4.5-9. Police Protection Effects: Mixed Use Alternative**

	1998	2003	2013
<b>Tarrant County Sheriff's Department<sup>(a)</sup></b>	1	1	1
Military Reuse	0	0	0
Civilian Reuse	0	0	0
<b>Fort Worth Police Department</b>	3	3	4
Military Reuse	3	3	3
Civilian Reuse	0	0	1
<b>Total</b>	4	4	5

Notes: Effects of migratory-related off-base population changes on number of full-time sworn officers required are shown cumulatively and exclude area-generated effects. Only those departments projected to experience effects associated with population in-migration attributable to this alternative are included in the table. Effects are rounded to the nearest whole employee.

(a) When considered separately, the effects of the military reuse and civilian reuse are zero. When combined, they result in one officer.

**Fort Worth Police Department.** Fort Worth is projected to experience population in-migration associated with the Mixed Use Alternative of 142 persons by 1998, increasing to 363 persons by the year 2013, over the No-Action/Realignment Alternative. This growth represents a potential increase in demand for police protection services from the Fort Worth Police Department, which by the year 2013 could result in the addition of one full-time sworn officer over the No-Action/Realignment Alternative in order to maintain the per capita level of service (see Table 4.5-9). This would be a 0.1 percent increase over the closure staff and a 33.3 percent increase over the No-Action/Realignment Alternative.

#### **4.5.4 Fire Protection**

Under each alternative, potential effects to fire protection services are examined. The analysis considers migratory-related population, service areas, and infrastructure responsibility changes. The disposed base property would become the responsibility of the appropriate jurisdictions under all reuse alternatives.

**Contracted Fire Protection Services.** The town of Westover Hills contracts with the Fort Worth Fire Department for fire protection services. The



migratory-related effects projected for Westover Hills are included in the discussion of effects projected for the Fort Worth Fire Department.

**Area-Generated Fire Fighters.** The portion of the off-site property that contains the Off-Site WSA is located in unincorporated Tarrant County and could increase the area served by the Tarrant County Support Unit by approximately 0.4 square mile. This additional area would not result in the addition of volunteer fire fighters in order to maintain the area-generated level-of-service ratio of less than 0.1 volunteer fire fighter per square mile.

The portion of the on-site property proposed for civilian development that falls within the city of Fort Worth could increase the area served by the Fort Worth Fire Department by approximately 0.1 square mile. This additional area would not result in the addition of full-time fire fighters to the staff of the Fort Worth Fire Department, which had an area-generated level-of-service ratio of 2.2 full-time fire fighters per square mile.

The portion of the on-site property not under military jurisdiction that falls within Westworth Village would increase the area served by the Westworth Village Volunteer Fire Department by approximately 0.6 square mile. This additional area would result in the addition of four volunteer fire fighters to the Westworth Village Volunteer Fire Department in order to maintain the area-generated level-of-service ratio of 6.8 volunteer fire fighters per square mile.

The civilian portion of the on-site property that falls within White Settlement could increase the area served by the White Settlement Volunteer Fire Department by approximately 0.1 square mile. This additional area would result in the addition of one volunteer fire fighter to the White Settlement Volunteer Fire Department, which had an area-generated level-of-service ratio of 7.3 volunteer fire fighters per square mile.

The area-generated effects are the same for all communities under both reuse alternatives.

The mutual-aid agreements in place prior to closure among the communities of the ROI would not be affected by the implementation of an alternative. It is assumed that the informal mutual-aid agreement between the base and the surrounding communities (e.g., for crash and fire support, use of foam truck, etc.) would continue through the year 2013.

#### **4.5.4.1 No-Action/Realignment Alternative**

**Tarrant County Support Unit.** Tarrant County is projected to experience population in-migration associated with the No-Action/Realignment Alternative of 419 persons in 1998, decreasing to 416 by the year 2013. Tarrant County Support Unit is not projected to require additional volunteer fire

fighters over the 20-year study period in order to maintain the per capita level-of-service ratio of one volunteer per 1,000 population served (Table 4.5-10).

**Table 4.5-10. Fire Protection Effects: No-Action/Realignment Alternative**

	1998	2003	2013
Fort Worth Fire Department	2	2	2
Westworth Village	1	1	1
<b>Total</b>	<b>3</b>	<b>3</b>	<b>3</b>

**Note:** Effects of projected migratory-related off-base population changes on number of full-time fire fighters required are shown cumulatively and exclude area-generated effects. In the case of entirely volunteer fire departments, the number of additional volunteer fire fighters required is provided. Effects of the migratory-related population changes projected for Westover Hills are included in the effects shown for the Fort Worth Fire Department. Effects are rounded to the nearest whole fire fighter.

**Fort Worth Fire Department.** Fort Worth is projected to experience growth in off-base population resulting from in-migration associated with the No-Action/Realignment Alternative of 1,325 persons in 1998, remaining constant through the year 2013. Since the town of Westover Hills contracts for fire protection services from Fort Worth, the projected three in-migrating persons to Westover Hills would be serviced by the Fort Worth Fire Department. The Fort Worth Fire Department is expected to require two additional fire fighters over the 20-year study period in order to maintain the per capita level-of-service ratio of 1.5 fire fighters per 1,000 population served. This would be a 0.3 percent increase over the closure staff of 649 fire fighters.

**Westworth Village Fire Department.** Westworth Village is projected to experience an off-base population increase of 145 persons in 1998 and remaining at this level through the year 2013. The Westworth Village Fire Department is expected to increase the number of volunteer fire fighters by one position over the 20-year study period in order to maintain the preclosure per capita service ratio of 7.3 volunteer fire fighters per 1,000 population served. This would be an increase of 6.3 percent over the closure staff level of 16 volunteers.

#### **4.5.4.2 Proposed Action**

**Tarrant County Support Unit.** Tarrant County is projected to experience population in-migration associated with the Proposed Action of 69 persons in 1998 and increasing to 199 persons by the year 2013 over the No-Action/Realignment Alternative. The Tarrant County Support Unit is projected to require 1 additional volunteer fire fighter, a 7.8 percent increase over the closure staff of 13 volunteer fire fighters when combined with the No-Action/Realignment Alternative population in-migration. This would maintain the per capita level of service (Table 4.5-11).

**Table 4.5-11. Fire Protection Effects: Proposed Action**

	1998	2003	2013
<b>Tarrant County Support Unit<sup>(a)</sup></b>	0	1	1
Military Reuse	0	0	0
Civilian Reuse	0	0	0
<b>Fort Worth Fire Department</b>	2	2	2
Military Reuse	2	2	2
Civilian Reuse	0	0	0
<b>Westworth Village Fire Department</b>	1	1	1
Military Reuse	1	1	1
Civilian Reuse	0	0	0
<b>Total</b>	3	4	4

Notes: Effects of projected migratory-related off-base population changes on number of full-time fire fighters required are shown cumulatively and exclude area-generated effects. In the case of entirely volunteer fire departments, the number of additional volunteer fire fighters required is provided. Effects of the migratory-related population changes projected for Westover Hills are included in the effects shown for the Fort Worth Fire Department. Effects are rounded to the nearest whole fire fighter.

(a) When considered separately, the effects of the military reuse and civilian reuse are zero. When taken together, they result in one volunteer fire fighting position.

**Fort Worth Fire Department.** The increase in off-base population in Fort Worth and Westover Hills resulting from civilian reuse activities under the Proposed Action would not be sufficient to require additional staffing over the No-Action/Realignment Alternative.

**Westworth Village Fire Department.** The increase in off-base population in Westworth Village resulting from civilian reuse activities under the Proposed Action would not be sufficient to require additional staffing over the No-Action/Realignment Alternative.

#### **4.5.4.3 Mixed Use Alternative**

**Tarrant County Support Unit.** That portion of Tarrant County outside of the eight communities under analysis is expected to experience population in-migration associated with the Mixed Use Alternative of 148 persons in 1998 and increasing to 352 persons by the year 2013 over the No-Action/Realignment Alternative. The Tarrant County Support Unit is projected to require one additional volunteer fire fighter, a 7.8 percent increase over the closure staff when combined with the No-Action/Realignment Alternative. This would maintain the per capita level of service (Table 4.5-12).

**Fort Worth Fire Department.** Fort Worth is expected to experience growth in off-base population resulting from in-migration associated with the Mixed Use

**Table 4.5-12. Fire Protection Effects: Mixed Use Alternative**

	1998	2003	2013
<b>Tarrant County Support Unit<sup>(a)</sup></b>	1	1	1
Military Reuse	0	0	0
Civilian Reuse	0	0	0
<b>Fort Worth Fire Department</b>	2	2	3
Military Reuse	2	2	2
Civilian Reuse	0	0	1
<b>Westworth Village Fire Department</b>	1	1	1
Military Reuse	1	1	1
Civilian Reuse	0	0	0
<b>Total</b>	<b>4</b>	<b>4</b>	<b>5</b>

Notes: Effects of projected migratory-related off-base population changes on number of full-time fire fighters required are shown cumulatively and exclude area-generated effects. In the case of entirely volunteer fire departments, the number of additional volunteer fire fighters required is provided. Effects of the migratory-related population changes projected for Westover Hills are included in the effects shown for the Fort Worth Fire Department. Effects are rounded to the nearest whole fire fighter.

(a) When considered separately, the effects of the military reuse and civilian reuse are zero. When taken together, the effect is one volunteer fire fighting position.

Alternative of 142 persons in 1998, increasing to 363 by the year 2013 over the No-Action/Realignment Alternative. The projected three in-migrating persons to Westover Hills would also be serviced by the Fort Worth Fire Department. The Fort Worth Fire Department is projected to require one additional fire fighter over the No-Action/Realignment Alternative. This would maintain the per capita level of service and would be a 0.2 percent increase above the closure staff and a 50 percent increase over the No-Action/Realignment Alternative.

**Westworth Village Fire Department.** The increase in off-base population in Westworth Village resulting from civilian reuse activities under the Mixed Use Alternative would not be sufficient to require additional staffing over the No-Action/Realignment Alternative.

#### **4.5.5 Health Care**

With the closure of the base, the nearest comparable medical facility on a military installation is approximately 115 miles northwest at Sheppard AFB, near Wichita Falls, Texas. This facility is equipped as a hospital and could provide retirees a full range of services.

The region's military retirees and their dependents would also continue to rely on the ROI's community health care facilities and CHAMPUS for medical

and health care cost reimbursement. Following closure, those veterans and retirees residing in the ROI would continue to have access to the VA Hospital in Dallas (approximately 40 miles east), where priority is given to veterans with service-related illnesses or injuries. These are the closure conditions with which each of the alternatives are compared.

**4.5.5.1 No-Action/Realignment Alternative.** Under the No-Action/Realignment Alternative, the hospital would be closed. The community health care services in place at closure are expected to have sufficient capacity to meet the health care needs of the population of the ROI.

**4.5.5.2 Proposed Action.** Under the Proposed Action, the hospital would be renovated to provide secured inpatient medical care for 300 federal inmates. The community health care services in place at closure are projected to have sufficient capacity to meet the health care needs of the population of the ROI.

**4.5.5.3 Mixed Use Alternative.** Under the Mixed Use Alternative, the hospital would be used either as a public or private hospital with associated medical and medical training uses. It is anticipated that the community health care services in place at closure, supplemented by the proposed facilities at the site under the Mixed Use Alternative, would meet the health care needs of the population of the ROI.

## **4.6 PUBLIC FINANCE**

Fiscal effects to potentially affected jurisdictions are presented in this section. The results represent the net effects of reuse after accounting for out-migration of the direct and indirect military and civilian jobs associated with phasing out of the Carswell AFB mission.

Key assumptions regarding jurisdictional control of on-site and off-site property, which influence fiscal assessments, are presented below.

- All areas designated for institutional and public facilities/recreation uses would remain in public ownership.
- The areas designated for industrial and commercial land uses may initially remain in public ownership, but would ultimately be leased or sold to the private sector.
- Land and improvements designated for residential uses would be sold in the private market.
- The local authorities that have jurisdiction over the excess on- and off-site areas would be responsible for providing services to those sites. For purposes of this analysis, financing for the

purchase of improvements and the development of additional improvements as required is assumed to take the form of direct grants-in-aid from state and federal grant programs, revenue bonds, reserves, and/or other aid programs.

Section 3(e) of P.L. 81-874 provides for supplemental impact aid payments for eligible school districts that have had a decrease in the number of federally connected children due to a decrease or cessation of federal activities within the state.

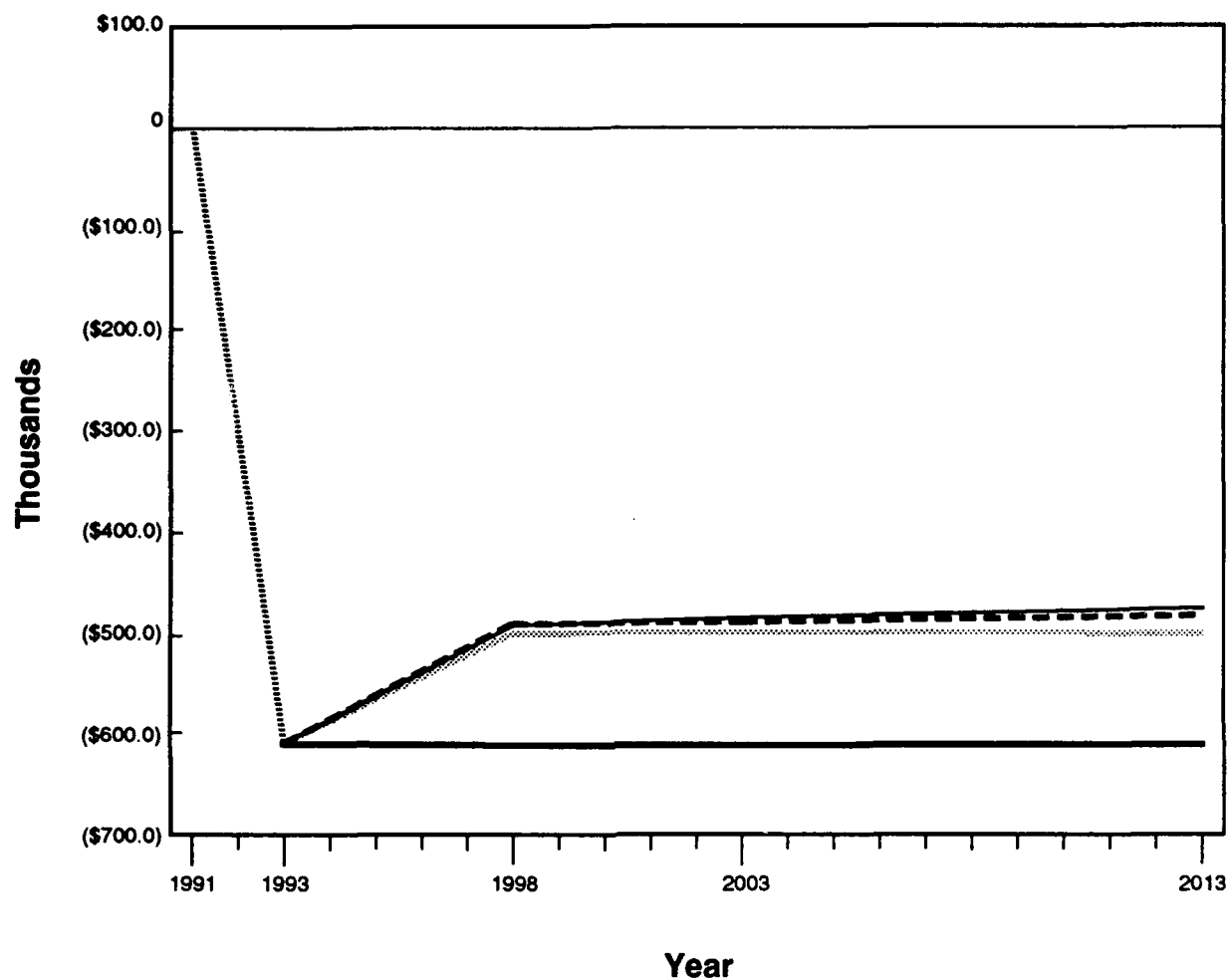
If a school district receives Section 3(e) transition funds, the federal impact aid that the district would otherwise receive could be supplemented for a 4-year period. Thus, the initial loss of P.L. 81-874 funds could be reduced and could occur more gradually, for up to 4 years, including the first year of closure. However, an individual school district's 3(e) entitlement may be reduced or prorated, depending on the total available federal appropriation, which is determined annually, and the number of districts funded. The state of Texas does not reduce the state allocation of education funds to a school district by the amount of P.L. 81-874 funds received by the district. The closure conditions described in Chapter 3 and referenced below for each district, assume no receipt of Section 3(e) transition funds.

#### **4.6.1 No-Action/Realignment Alternative**

**4.6.1.1 Tarrant County.** The net fiscal receipts would not offset projected closure deficits (\$613,680). The deficit would be reduced to \$503,320 by 1998 and rise slightly to \$503,440 by the year 2013. Figure 4.6-1 shows the net fiscal effects of the No-Action/Realignment Alternative and the reuse alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.1.2 City of Benbrook.** The net fiscal receipts would not offset projected closure deficits (\$40,392). The deficit would be reduced to \$34,848 by 1998 and would remain at this level by the year 2013. Figure 4.6-2 shows the net fiscal effects of the No-Action/Realignment Alternative and the reuse alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.1.3 City of Fort Worth.** Net fiscal receipts would not offset projected closure deficits (\$857,472). The deficit would be reduced to \$740,872 by 1998 and would remain at this level by the year 2013. Figure 4.6-3 shows the net fiscal effects of the No-Action/Realignment Alternative and the reuse alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

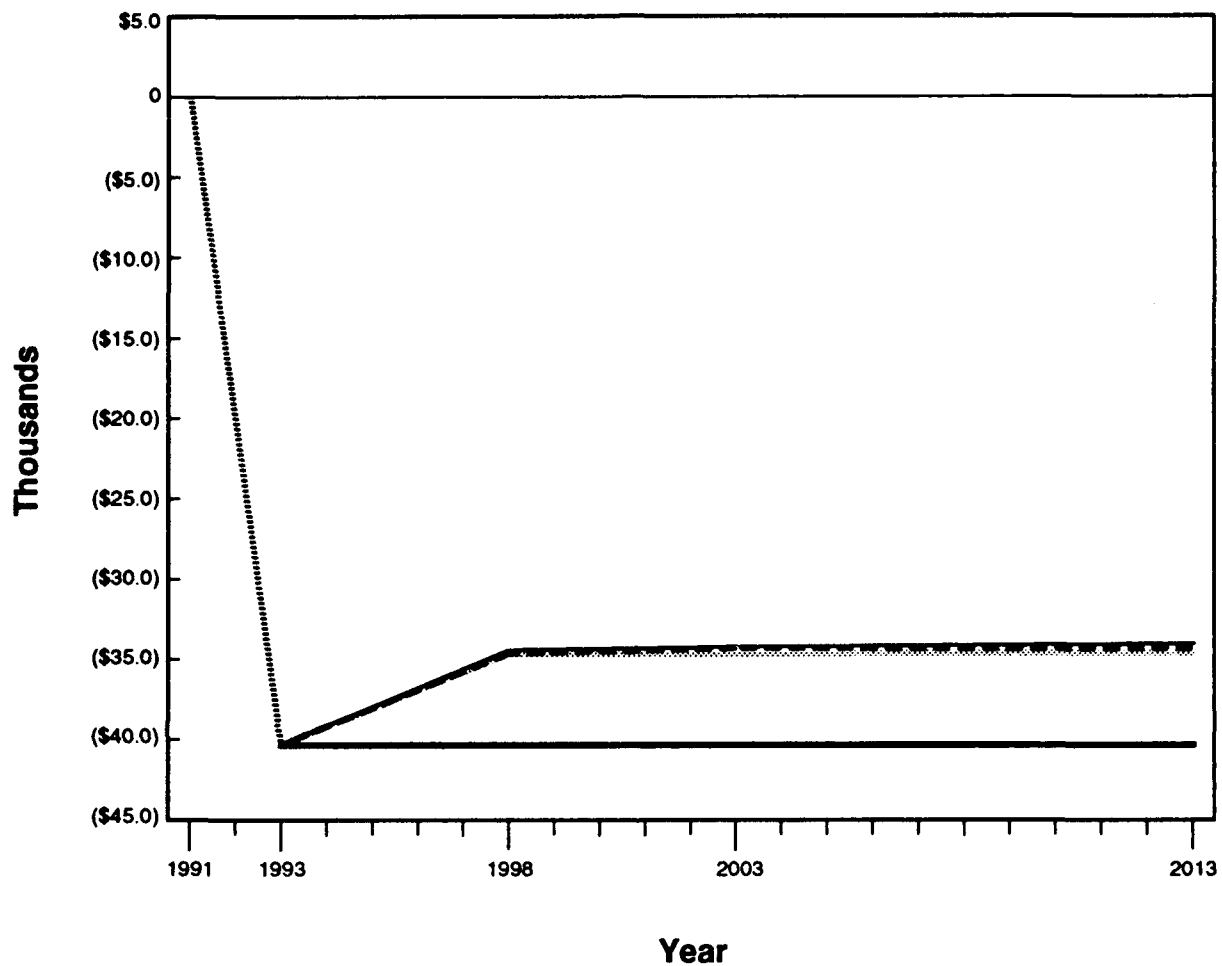


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment Alternative
- - - Proposed Action
- Mixed Use Alternative

**Tarrant County  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-1**



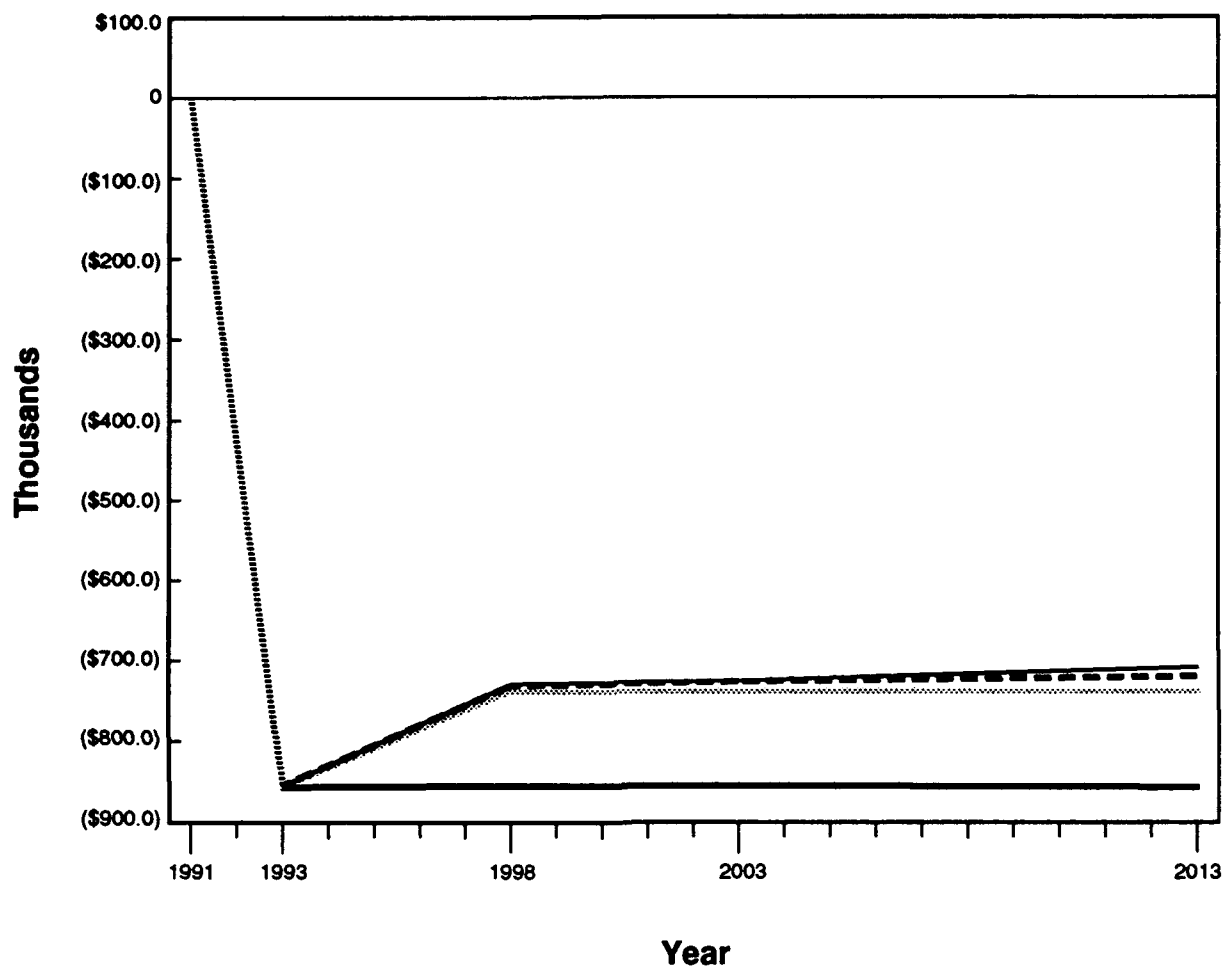
#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- - - - - No-Action/Realignment Alternative
- . - . - Proposed Action
- Mixed Use Alternative

**City of Benbrook  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-2**





#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- . - . - . No-Action/Realignment Alternative
- - - - Proposed Action
- Mixed Use Alternative

**City of Fort Worth  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-3**

**4.6.1.4 City of Lake Worth.** The net fiscal receipts would not offset projected closure deficits (\$1,350). The deficit would be reduced to \$1,200 by 1998 and would remain at this level by the year 2013. Figure 4.6-4 shows the net fiscal effects of the No-Action/Realignment Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

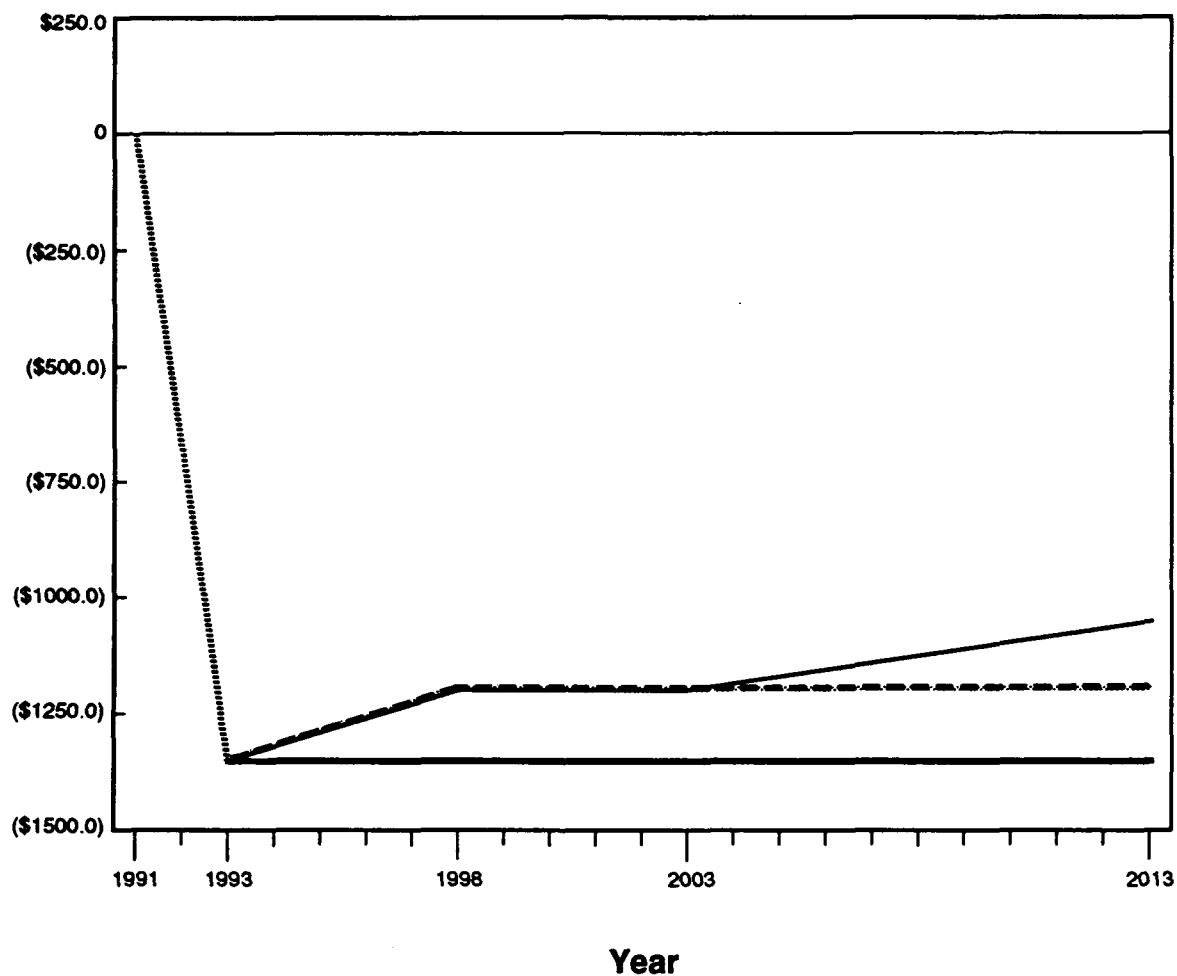
**4.6.1.5 City of River Oaks.** Net fiscal receipts would not offset projected closure deficits (\$4,880). The deficit would be reduced to \$4,272 by 1998 and would remain at this level by the year 2013. Figure 4.6-5 shows the net fiscal effects of the No-Action/Realignment Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.1.6 City of Sansom Park.** Net fiscal receipts would not offset expected closure deficits (\$3,942). The deficit would be reduced to \$3,483 by 1998 and to \$1,200 by the year 2013. Figure 4.6-6 shows the net fiscal effects of the No-Action/Realignment Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the city.

**4.6.1.7 Town of Westover Hills.** Net fiscal receipts would not offset projected closure deficits (\$2,496). The deficit would be reduced to \$1,920 by 1998 and would remain at this level by the year 2013. Figure 4.6-7 shows the net fiscal effects of the No-Action/Realignment Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.1.8 City of Westworth Village.** Net fiscal receipts would not offset expected closure deficits (\$22,516). The deficit would be reduced to \$21,125 by 1998 and would remain at this level by the year 2013. Figure 4.6-8 shows the net fiscal effects of the No-Action/Realignment Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.1.9 City of White Settlement.** Net fiscal receipts would not offset projected closure deficits (\$1,778). The deficit would be reduced to \$1,616 by 1998 and would remain at this level by the year 2013. Figure 4.6-9 shows the net fiscal effects of the No-Action/Realignment Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

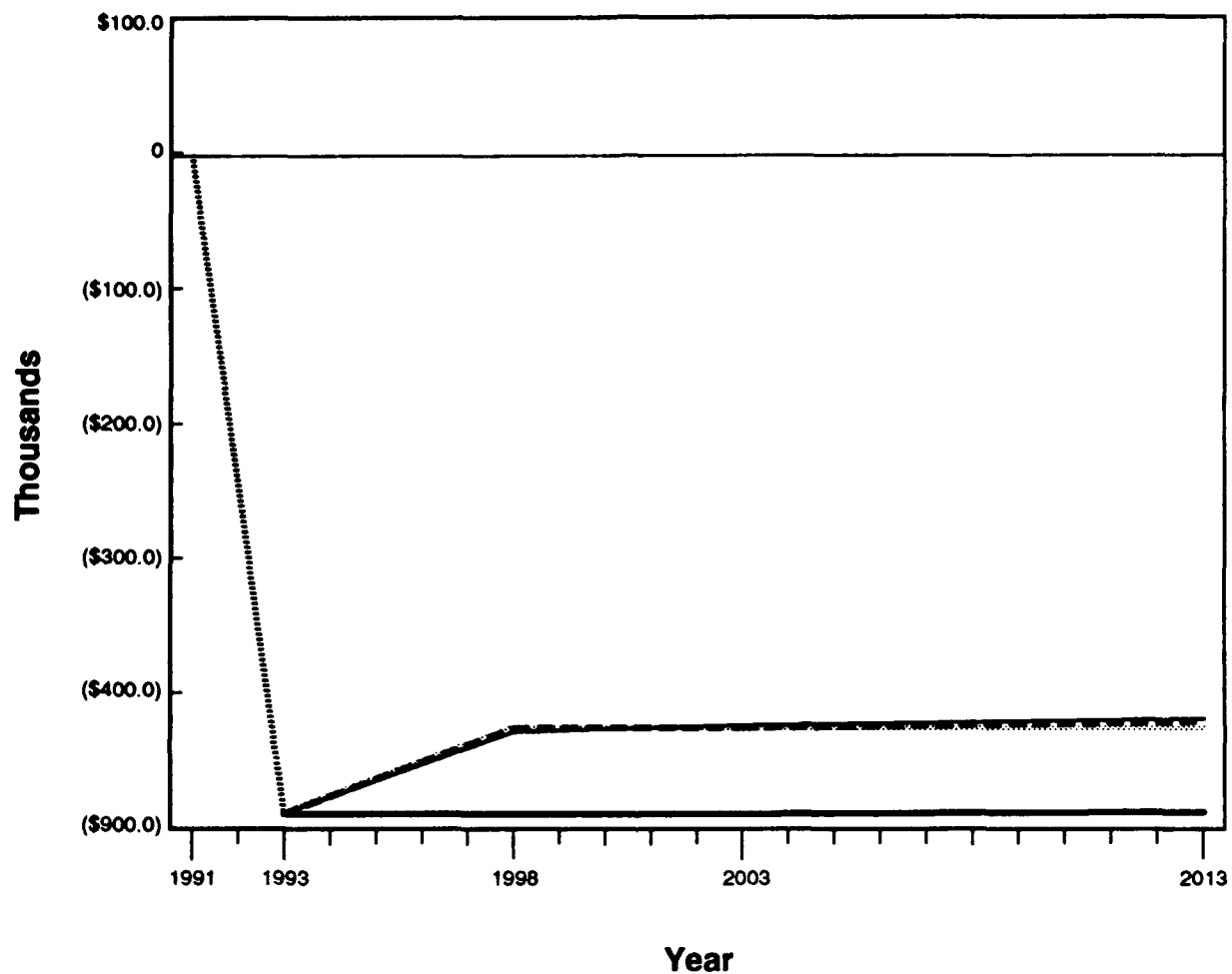


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment Alternative
- - - Proposed Action
- Mixed Use Alternative

**City of Lake Worth  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-4**

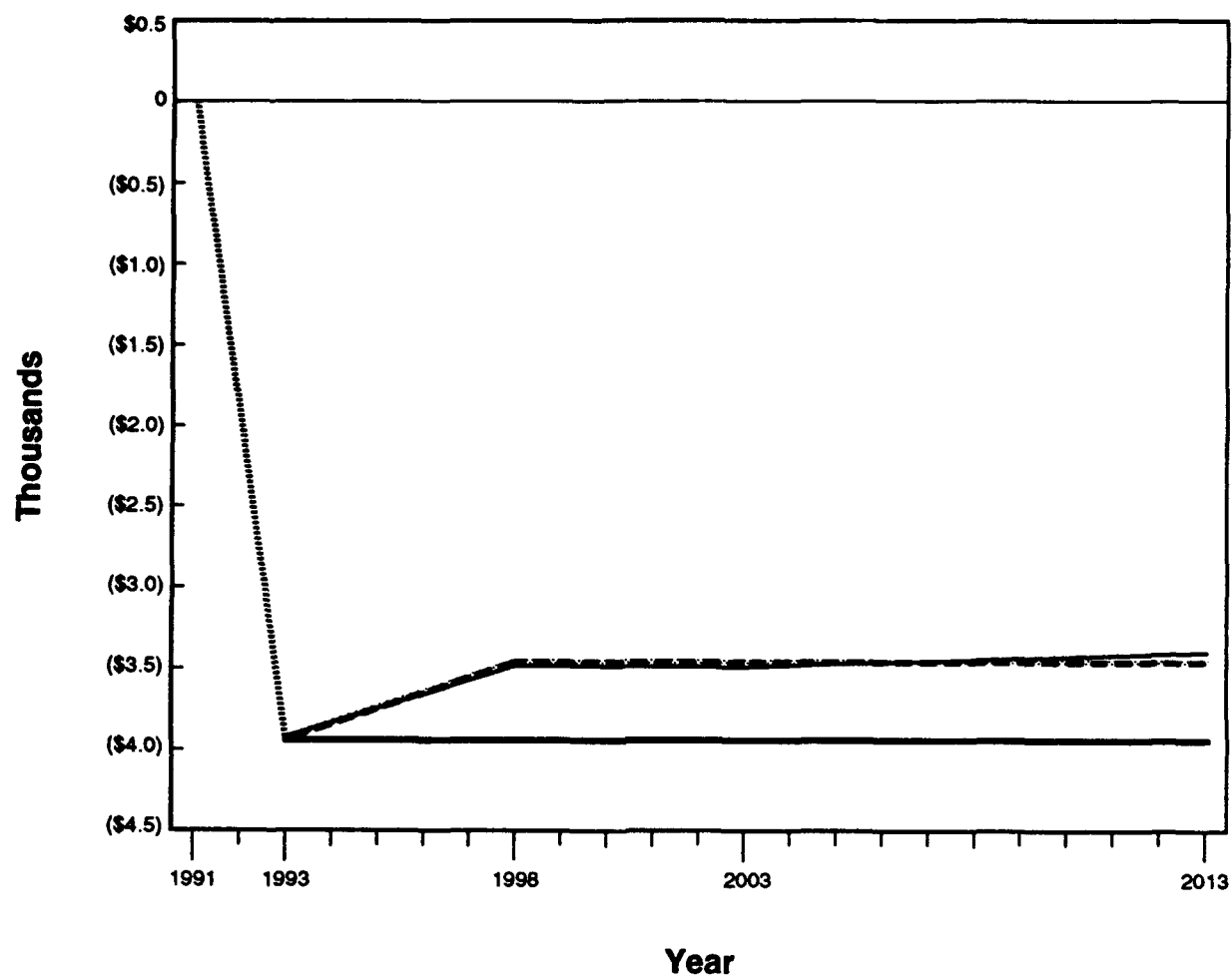


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- No-Action/Realignment Alternative
- - - - Proposed Action
- Mixed Use Alternative

**City of River Oaks  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-5**

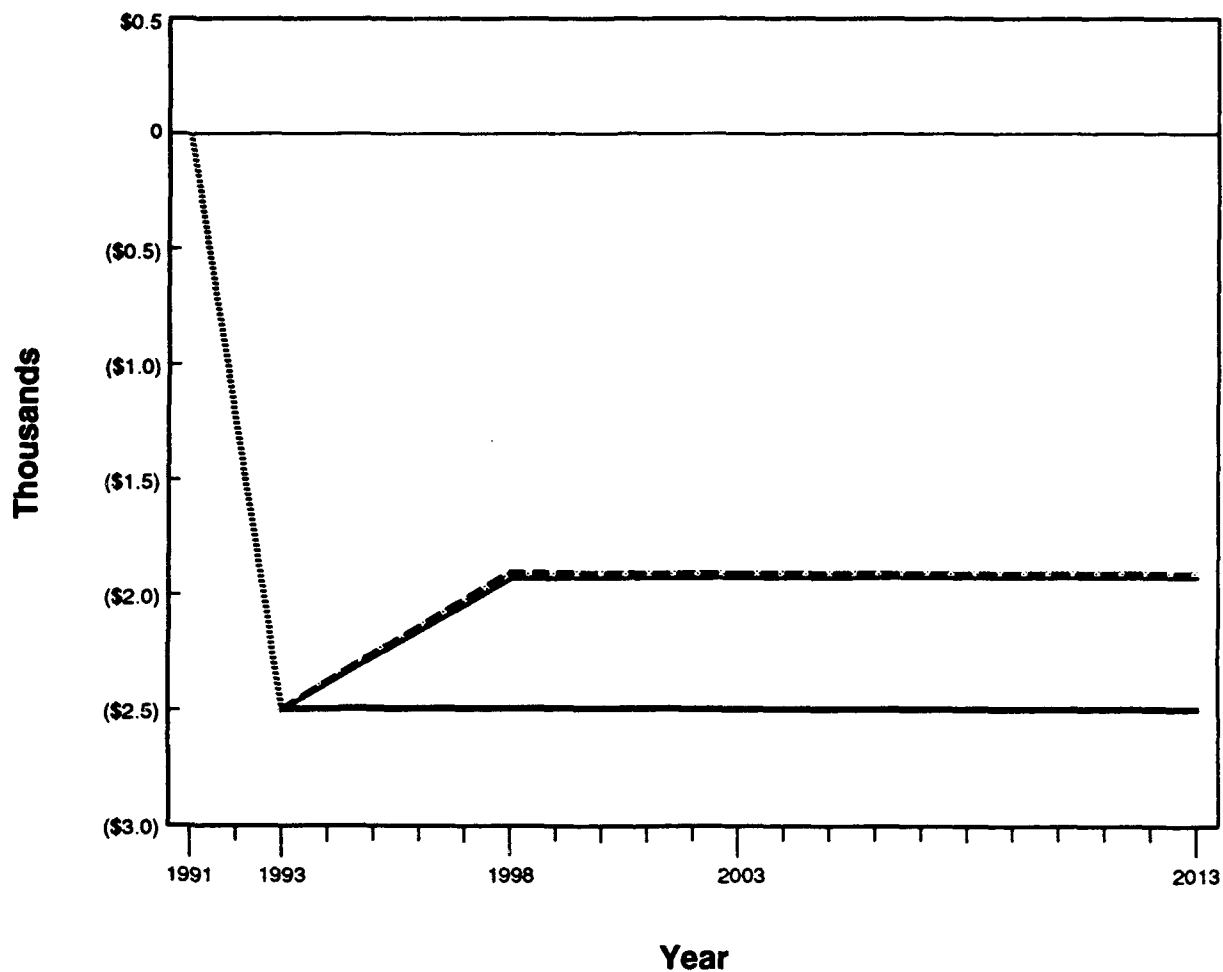


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment Alternative
- - - Proposed Action
- Mixed Use Alternative

**City of Sansom Park  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-6**

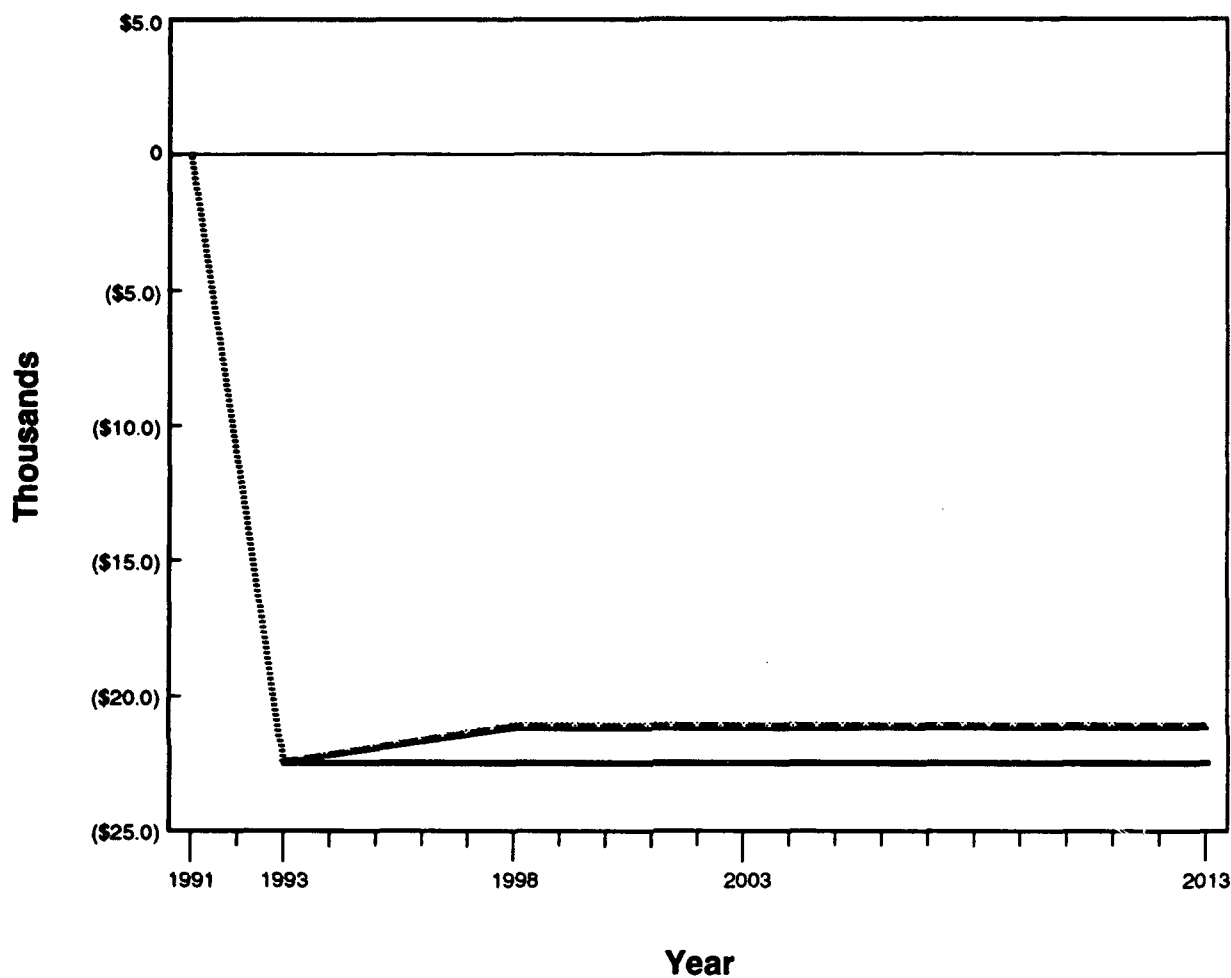


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- - - - - No-Action/Realignment Alternative
- . - . - Proposed Action
- Mixed Use Alternative

**Town of Westover Hills  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-7**

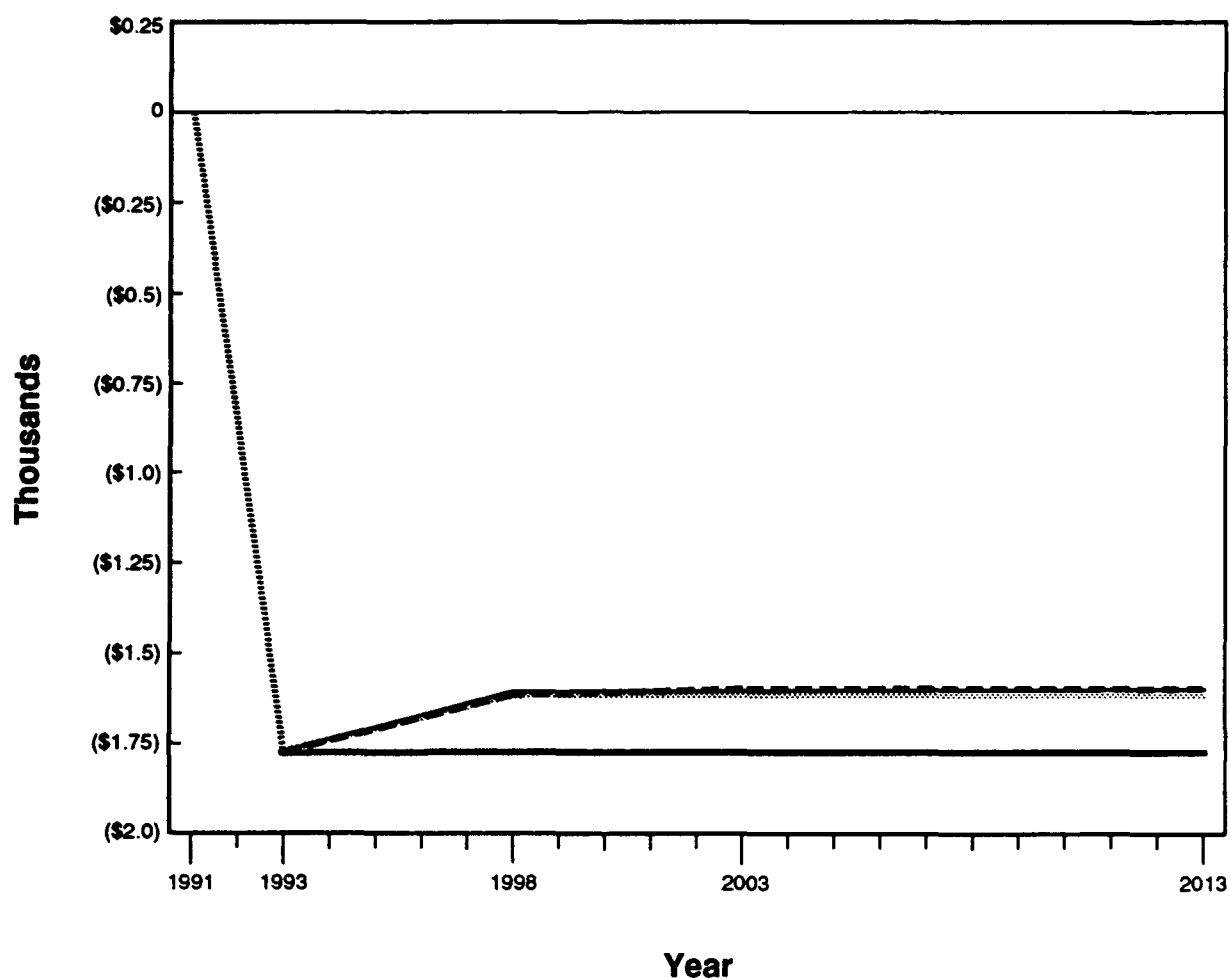


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- - - - - No-Action/Realignment Alternative
- . - . - Proposed Action
- Mixed Use Alternative

**City of Westworth Village  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-8**



#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- No-Action/Realignment Alternative
- - - - Proposed Action
- Mixed Use Alternative

**City of White Settlement  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-9**



**4.6.1.10 Castleberry ISD.** Compared to a net fiscal deficit of \$107,359 under closure conditions, the No-Action/Realignment Alternative would result in a net fiscal deficit of approximately \$41,567 in 1998 and would remain at this level by the year 2013. Figure 4.6-10 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.1.11 Fort Worth ISD.** Compared to a net fiscal deficit of \$1,947,500 under closure conditions, the No-Action/Realignment Alternative would result in a new fiscal deficit of approximately \$1,577,975 in 1998 and would remain at this level by the year 2013. Figure 4.6-11 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

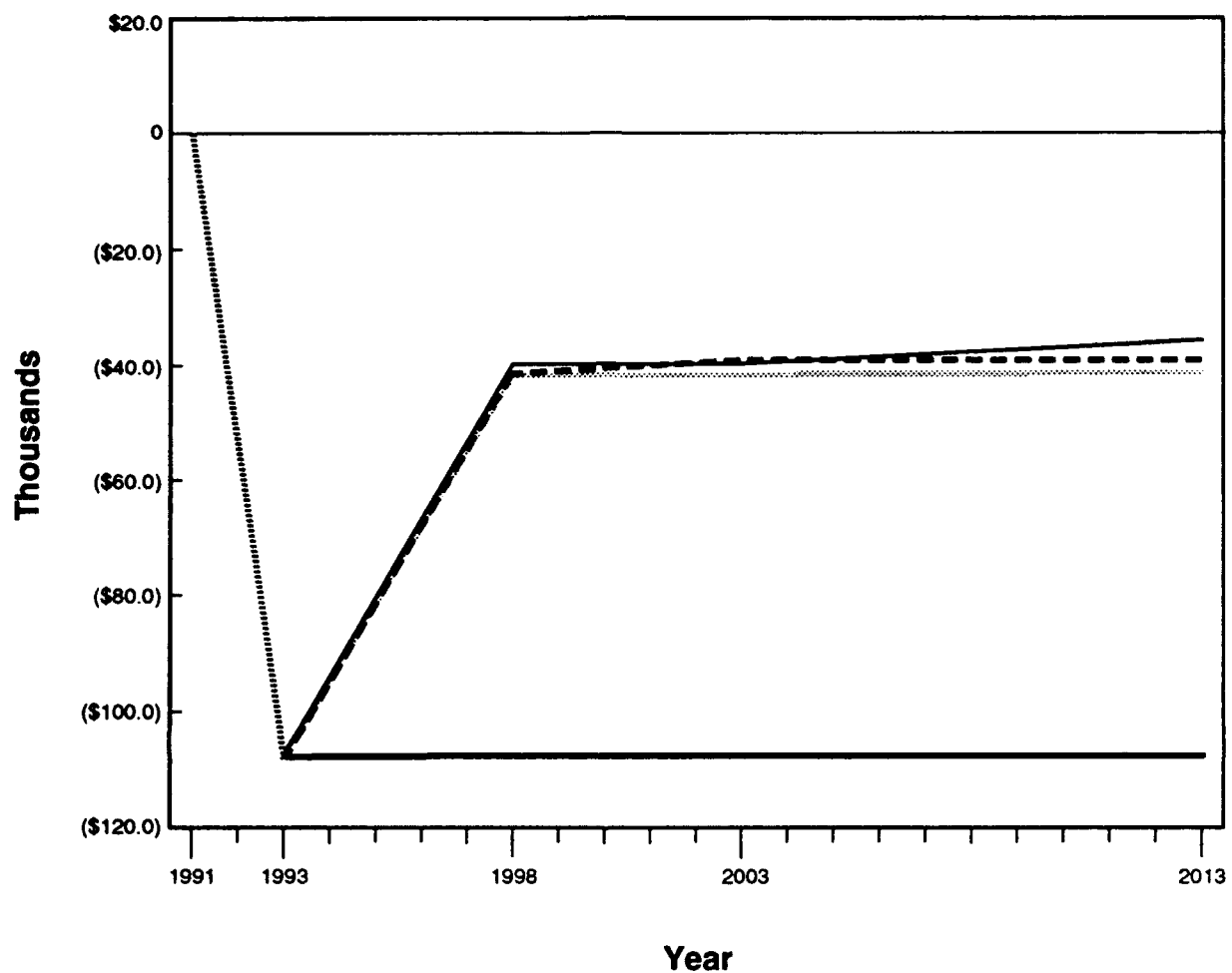
**4.6.1.12 Lake Worth ISD.** Compared to a net fiscal deficit of \$196,238 under closure conditions, the No-Action/Realignment Alternative would result in a net fiscal deficit of approximately \$183,782 in 1998 and would remain at this level by the year 2013. Figure 4.6-12 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.1.13 White Settlement ISD.** Compared to a net fiscal deficit of \$576,334 under closure conditions, the No-Action/Realignment Alternative would result in a net fiscal deficit of approximately \$558,888 in 1998 and would remain at this level by the year 2013. Figure 4.6-13 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

#### **4.6.2 Proposed Action**

**4.6.2.1 Tarrant County.** The net fiscal receipts would not offset projected closure deficits (\$613,680). The deficit would be reduced to \$497,880 by 1998 and \$487,080 by the year 2013. The civilian contributions are \$5,440 and \$16,360 in 1998 and the year 2013, respectively. Figure 4.6-1 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.2 City of Benbrook.** The net fiscal receipts would not offset projected closure deficits (\$40,392). The deficit would be reduced to \$34,848 by 1998 and to \$34,452 by the year 2013. The civilian contributions are zero and \$396 in 1998 and 2013, respectively. Figure 4.6-2 shows the net fiscal effects of the Proposed Action and other

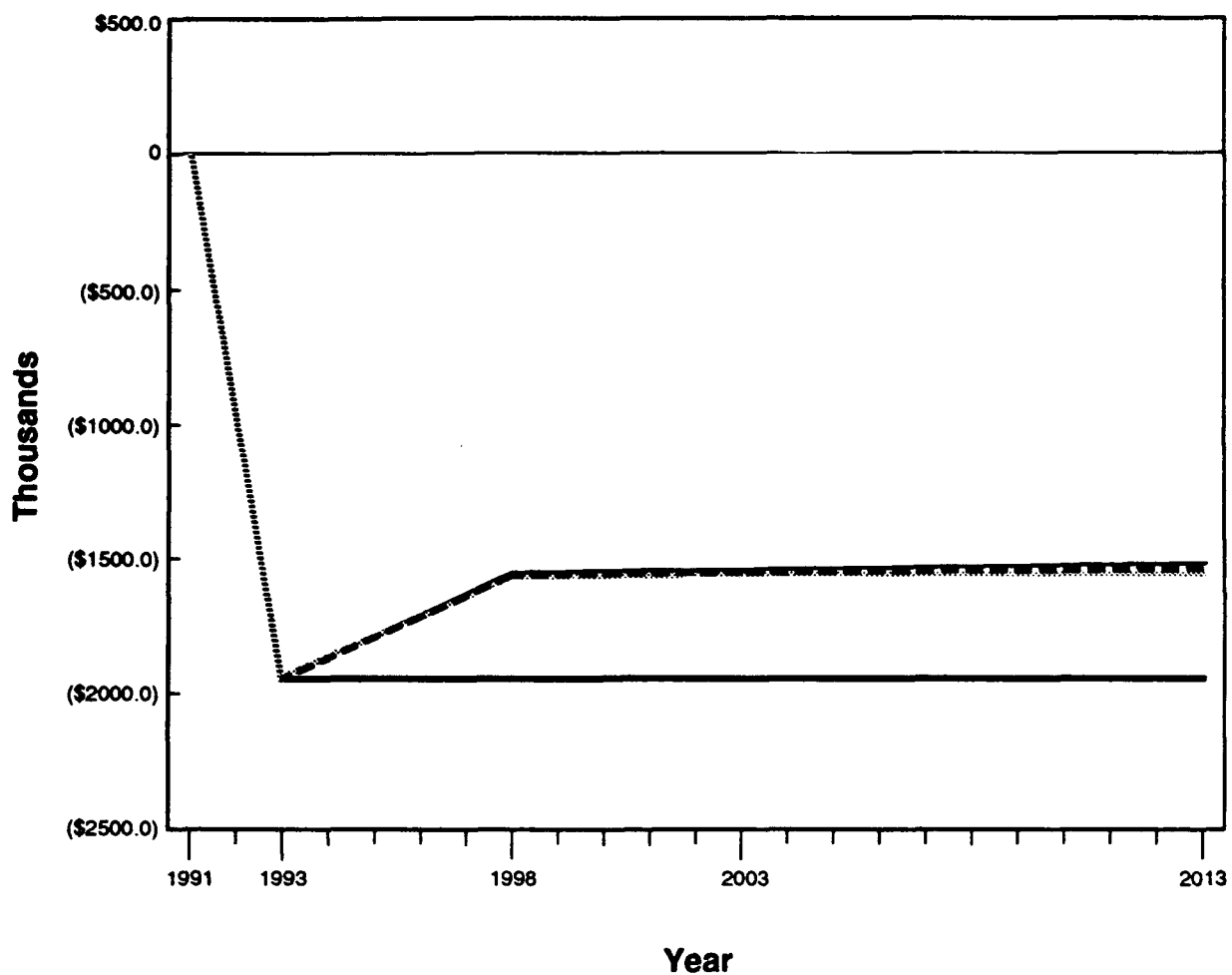


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- No-Action/Realignment Alternative
- - - - Proposed Action
- Mixed Use Alternative

**Castleberry Independent School District,  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-10**

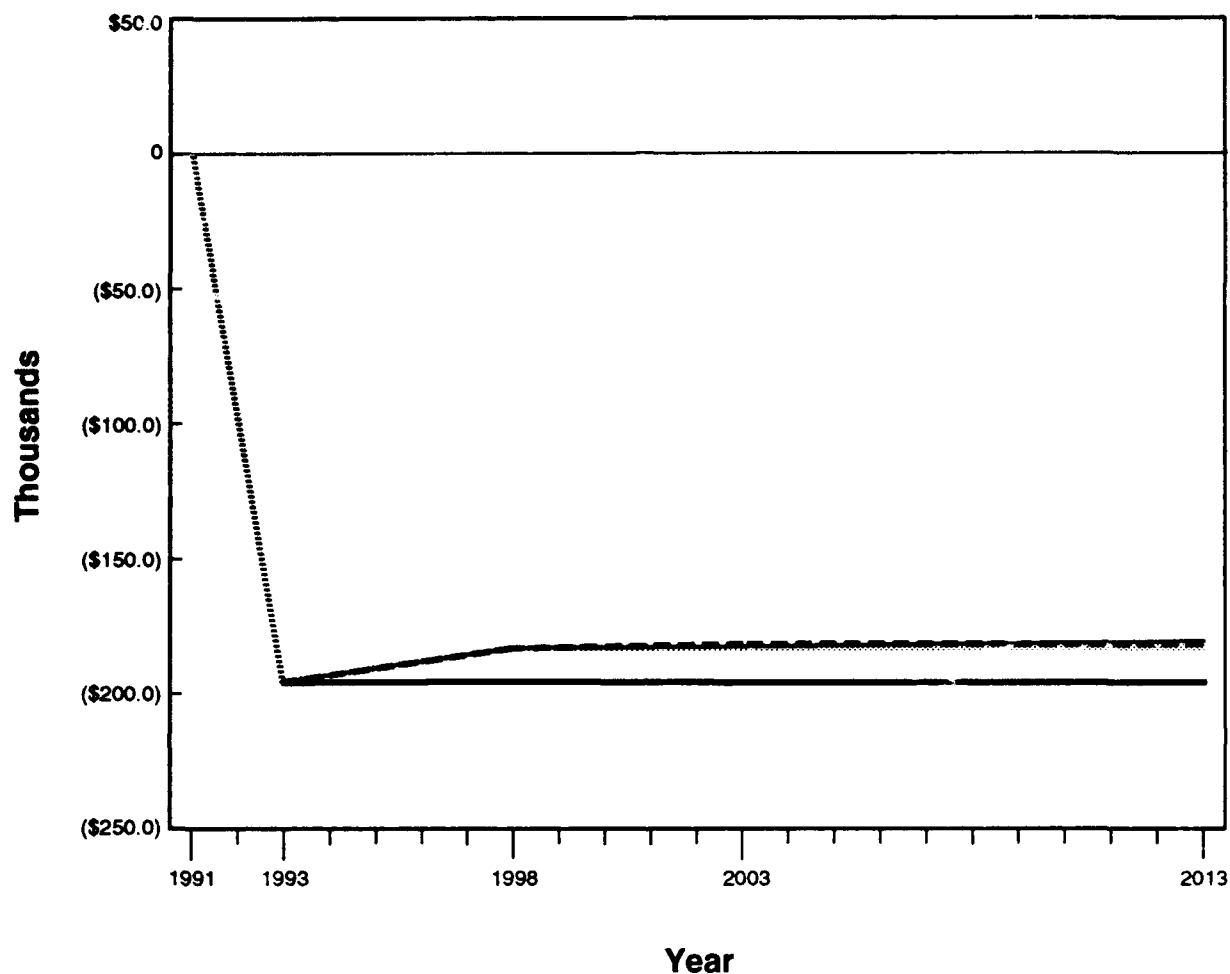


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment Alternative
- - - Proposed Action
- Mixed Use Alternative

**Fort Worth Independent School District,  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-11**

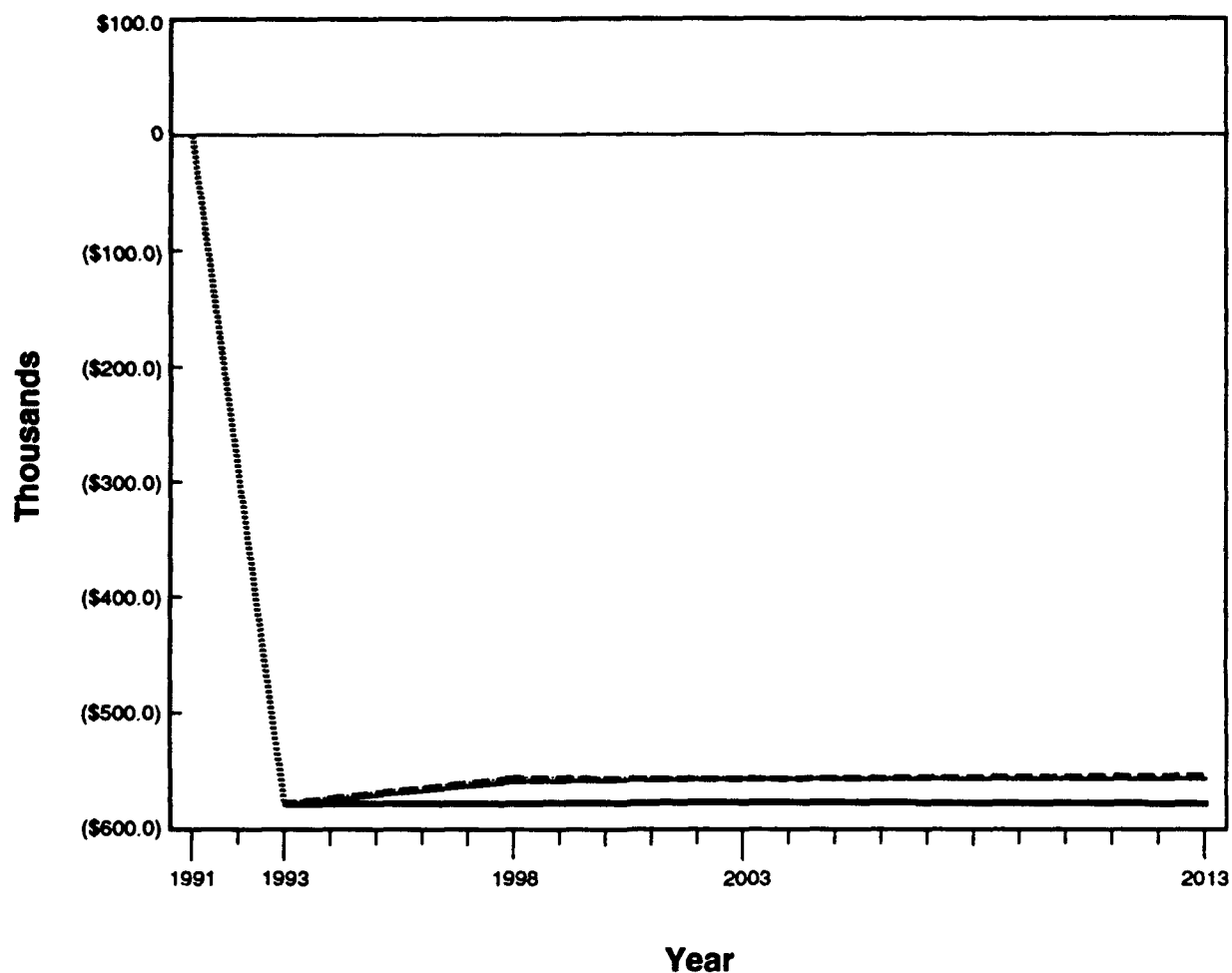


#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment Alternative
- - - Proposed Action
- Mixed Use Alternative

**Lake Worth Independent School District,  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-12**



#### EXPLANATION

- ..... Preclosure
- Post-closure Conditions
- ..... No-Action/Realignment Alternative
- - - Proposed Action
- Mixed Use Alternative

**White Settlement  
Independent School  
District,  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1989\$)**

**Figure 4.6-13**

Figure 4.6-2 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.3 City of Fort Worth.** Net fiscal receipts would not offset expected closure deficits (\$857,472). The deficit would be reduced to \$734,976 by 1998 and to \$723,721 by the year 2013. The civilian contributions are \$5,896 and \$17,151 in 1998 and the year 2013, respectively. Figure 4.6-3 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.4 City of Lake Worth.** The net fiscal receipts would not offset projected closure deficits (\$1,350). The deficit would be \$1,200 by 1998, remaining at this level by the year 2013. The civilian contributions are zero in both 1998 and the year 2013. Figure 4.6-4 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.5 City of River Oaks.** Net fiscal receipts would not offset expected closure deficits (\$4,880). The deficit would be reduced to \$4,272 by 1998 and to \$4,224 by the year 2013. The civilian contributions are zero and \$48 in 1998 and the year 2013, respectively. Figure 4.6-5 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.6 City of Sansom Park.** Net fiscal receipts would not offset projected closure deficits (\$3,942). The deficit would be reduced to \$3,483 by 1998 and would remain at this level by the year 2013. The civilian contributions are zero in both 1998 and the year 2013. Figure 4.6-6 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the city.

**4.6.2.7 Town of Westover Hills.** Net fiscal receipts would not offset closure deficits (\$2,496). The deficit would be reduced to \$1,920 by 1998 and would remain at this level by the year 2013. The civilian contributions are zero in both 1998 and the year 2013. Figure 4.6-7 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.8 City of Westworth Village.** Net fiscal receipts would not offset projected closure deficits (\$22,516). The deficit would be reduced to

\$21,125 by 1998 and would remain at this level by the year 2013. The civilian contributions are zero in both 1998 and the year 2013. Figure 4.6-8 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.9 City of White Settlement.** Net fiscal receipts would not offset expected closure deficits (\$1,778). The deficit would be reduced to \$1,616 by 1998 and to \$1,604 by the year 2013. The civilian contributions are zero and \$12 in 1998 and the year 2013, respectively. Figure 4.6-9 shows the net fiscal effects of the Proposed Action and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.2.10 Castleberry ISD.** The fiscal effect of the Proposed Action would not offset expected closure deficits of \$107,359. The Proposed Action would result in a net fiscal deficit of \$41,567 in 1998 and \$39,530 in 2013, compared to a net fiscal deficit of \$41,567 in both 1998 and the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-10 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.2.11 Fort Worth ISD.** The fiscal effect of the Proposed Action would not offset projected closure deficits of \$1,947,500. The Proposed Action would result in a net fiscal deficit of \$1,568,007 in 1998 and \$1,545,223 in the year 2013, compared to a net fiscal deficit of \$1,577,975 in both 1998 and the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-11 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.2.12 Lake Worth ISD.** The fiscal effect of the Proposed Action would not offset projected closure deficits of \$196,238. The Proposed Action would result in a net fiscal deficit of \$183,782 in 1998 and \$182,417 in 2013, compared to a net fiscal deficit of \$183,782 in both 1998 and the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-12 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.2.13 White Settlement ISD.** The fiscal effect of the Proposed Action would not offset projected closure deficits of \$576,334. The Proposed Action would result in a net fiscal deficit of \$557,565 in 1998 and \$556,242 in the year 2013, compared to a net fiscal deficit of \$558,888 in both 1998 and in the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-13 shows the net fiscal effects of the alternatives.

Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

#### **4.6.3 Mixed Use Alternative**

**4.6.3.1 Tarrant County.** The net fiscal receipts would not offset projected closure deficits (\$613,680). The deficit would be reduced to \$491,440 by 1998 and \$473,160 by the year 2013. The civilian contributions are \$12,080 and \$30,280 in 1998 and the year 2013, respectively. Figure 4.6-1 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.2 City of Benbrook.** The net fiscal receipts would not offset projected closure deficits (\$40,392). The deficit would be reduced to \$34,452 by 1998 and to \$33,858 by the year 2013. The civilian contributions are \$396 and \$990 in 1998 and the year 2013, respectively. Figure 4.6-2 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.3 City of Fort Worth.** Net fiscal receipts would not offset projected closure deficits (\$857,472). The deficit would be reduced to \$728,376 by 1998 and \$708,928 by the year 2013. The civilian contributions are \$12,496 and \$31,944 in 1998 and the year 2013, respectively. Figure 4.6-3 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.4 City of Lake Worth.** The net fiscal receipts would not offset projected closure deficits (\$1,350). The deficit would be reduced to \$1,200 by 1998 and \$1,050 by the year 2013. The civilian contributions are zero and \$150 in 1998 and the year 2013, respectively. Figure 4.6-4 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.5 City of River Oaks.** Net fiscal receipts would not offset projected closure deficits (\$4,880). The deficit would be reduced to \$4,272 by 1998 and to \$4,176 by the year 2013. The civilian contributions are zero and \$96 in 1998 and the year 2013, respectively. Figure 4.6-5 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. The fiscal effect of the Mixed Use Alternative would not offset projected closure deficits of \$4,880. Cutbacks in service levels and/or additional revenue



from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.6 City of Sansom Park.** Net fiscal receipts would not offset projected closure deficits (\$3,942). The deficit would be reduced to \$3,483 by 1998 and to \$3,402 by the year 2013. The civilian contributions are zero and \$81 in 1998 and the year 2013, respectively. Figure 4.6-6 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the city.

**4.6.3.7 Town of Westover Hills.** Net fiscal receipts would not offset projected closure deficits (\$2,496). The deficit would be reduced to \$1,920 by 1998 and would remain at this level by the year 2013. The civilian contributions are zero in both 1998 and the year 2013. Figure 4.6-7 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.8 City of Westworth Village.** Net fiscal receipts would not offset projected closure deficits (\$22,516). The deficit would be reduced to \$21,125 by 1998 and to \$21,086 by the year 2013. The civilian contributions are zero and \$39 in 1998 and the year 2013, respectively. Figure 4.6-8 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.9 City of White Settlement.** Net fiscal receipts would not offset projected closure deficits (\$1,778). The deficit would be reduced to \$1,604 by 1998 and to \$1,592 by the year 2013. The civilian contributions are \$12 and \$24 in 1998 and the year 2013, respectively. Figure 4.6-9 shows the net fiscal effects of the Mixed Use Alternative and other alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the county.

**4.6.3.10 Castleberry ISD.** The fiscal effect of the Mixed Use Alternative would not offset projected closure deficits of \$107,359. The Mixed Use Alternative would result in a net fiscal deficit of \$39,530 in 1998 and \$35,456 in the year 2013, compared to a net fiscal deficit of \$41,567 in both 1998 and the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-10 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.3.11 Fort Worth ISD.** The fiscal effect of the Mixed Use Alternative would not offset projected closure deficits of \$1,947,500. The Mixed Use

Alternative would result in a net fiscal deficit of \$1,553,767 in 1998 and \$1,515,319 in the year 2013, compared to a net fiscal deficit of \$1,577,975 in both 1998 and the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-11 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.3.12 Lake Worth ISD.** The fiscal effect of the Mixed use Alternative would not offset projected closure deficits of \$196,238. The Mixed Use Alternative would result in a net fiscal deficit of \$182,417 in 1998 and \$179,687 in the year 2013, compared to a net fiscal deficit of \$183,782 in both 1998 and the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-12 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

**4.6.3.13 White Settlement ISD.** The fiscal effect of the Mixed Use Alternative would not offset projected closure deficits of \$576,334. The Mixed Use Alternative would result in a net fiscal deficit of \$557,565 in 1998 and \$554,919 in the year 2013, compared to a net fiscal deficit of \$558,888 in both 1998 and in the year 2013 under the No-Action/Realignment Alternative. Figure 4.6-13 shows the net fiscal effects of the alternatives. Cutbacks in service levels and/or additional revenue from new revenue sources may be required to maintain a balanced fiscal position in the district.

## **4.7 TRANSPORTATION**

The effects of the No-Action/Realignment Alternative, the Proposed Action and the Mixed Use Alternative on the components of the transportation system (including roadways, air transportation, and other transportation modes) are presented in this section.

To determine reuse-related effects on local roadways, closure baseline traffic volumes were increased in proportion to the growth in traffic projected between 1990 and the year 2010 by the Regional Planning Office of the Texas State Department of Highways and Public Transportation in the Dallas Fort Worth Regional Transportation Study.

The reuse-related traffic volumes were then added to the post-closure projections and traffic effects were determined based on LOS changes for each of the key roads.

Because neither the Proposed Action nor any of the alternatives assumes direct use of the local railroads, direct effects on the rail system are expected to be minimal.

#### 4.7.1 No-Action/Realignment Alternative

**4.7.1.1 Roadways.** Four access points to the base were used to distribute traffic generated by the military reuse activities. It is estimated that approximately 7,000 one-way average daily trips would be generated by this alternative on an average weekday. The numbers of estimated trips generated by on-site development are depicted in Table 4.7-1. Traffic associated with the No-Action/Realignment Alternative would increase the daily traffic on Interstate 30 by approximately 2 percent over post-closure conditions. The 1992 TIP for the Dallas/Fort Worth Metropolitan Area identifies plans to widen Interstate 30 from Las Vegas Trail west to Interstate 820. The roadway would be increased from four lanes to six lanes during the 1993 to 1996 time period. With this improvement, the roadway would operate at LOS B through the year 2013. Interstate 30 between SH 183 and Camp Bowie Boulevard would operate at LOS D or better by 2013.

**Table 4.7-1. Summary of Total Daily Trips Generated by Reuse Alternatives**

Reuse Alternative	1998	2003	2013
No-Action/Realignment	7,000	7,000	7,000
Proposed Action	15,350	24,850	34,250
Mixed Use	24,300	31,150	44,550

On Interstate 820, the No-Action/Realignment Alternative would increase traffic volumes by 0.5 percent over post-closure conditions. This increase would not affect the projected LOS of C.

Traffic associated with the No-Action/Realignment Alternative on SH 183 would increase traffic volumes by 46 percent over post-closure conditions. The LOS is expected to decrease from LOS A at closure to LOS B by the year 2013 along the section of SH 183 adjacent to the base. As noted in Section 3.7, this roadway is identified in Mobility 2010 for widening; however, no specific plans or timetable exists for the improvement.

Traffic associated with the No-Action/Realignment Alternative would increase the daily traffic on SH 199 by 0.5 percent from post-closure conditions. Based on the Dallas/Fort Worth Regional Transportation Study, SH 199 is planned for an upgrade to an eight-lane freeway in the TIP. With these improvements the roadway would operate at LOS B in the year 2013.

Local roadways would operate at LOS D or better and the reductions in LOS due to traffic generated by this alternative would be negligible. The LOS on Spur 241, White Settlement Road and Clifford Street is not anticipated to change from LOS B. Roaring Springs Road, which provides access from

Interstate 30 to the base, would have an LOS D at closure. By the year 2013, the traffic volume is projected to increase by 3.5 percent over post-closure conditions and the roadway would maintain an LOS D.

This alternative assumes that on-base roadways would be used in the short-term during the construction period. As part of the eventual site development plan, internal circulation must accommodate the intensity of vehicular and pedestrian activities and provide an acceptable LOS including access from the local road network.

**4.7.1.2 Air Transportation.** Implementation of the No-Action/Realignment Alternative would not provide civilian commercial passenger or cargo service at NAS Fort Worth. Passenger traffic at DAL and DFW would not likely be affected in measurable amounts, as the similar traffic associated with Carswell AFB under the preclosure conditions did not contribute a substantial portion of the total traffic associated with these airports. The No-Action/Realignment Alternative does not include general aviation activity in the analysis period. As such, it is not anticipated that any effect to the local general aviation passenger base would result.

The No-Action/Realignment Alternative does not provide cargo operations at NAS Fort Worth during the analysis period. Cargo activity at airports within the ROI, therefore, would not be affected by implementation of the No-Action/Realignment Alternative.

**4.7.1.3 Other Transportation Modes.** Because none of the alternatives assumes direct use of the local railroads, direct effects on the rail system are expected to be minimal.

#### **4.7.2 Proposed Action**

**4.7.2.1 Roadways.** Four access points to the base were used to distribute traffic generated by the Proposed Action. It is estimated that approximately 34,250 average daily trips (including 27,250 civilian reuse trips) could be generated by the Proposed Action. The numbers of estimated trips generated by on-site development at various phases of reuse are depicted in Table 4.7-1.

Reuse-generated traffic on Interstate 30 between SH 183 and Interstate 820 would increase the peak hour volume by 300 vehicles over the No-Action/Realignment Alternative. This increase would result in a change in the LOS from B under the No-Action/Realignment Alternative to LOS C due to civilian reuse activities. Interstate 30 between SH 183 and Camp Bowie Boulevard would operate at LOS D or better by the year 2013, with an increase of 200 vehicles over the No-Action/Realignment Alternative.

Reuse-generated traffic on Interstate 820 would increase the peak hour volumes by 100 vehicles over the No-Action/Realignment Alternative in the year 2013. This increase would not result in any change in projected LOS. Reuse-generated traffic on Interstate 820 between White Settlement Road and Lake Worth would increase the peak hour volumes by less than 50 vehicles over the No-Action/Realignment Alternative in 2013. By 2013, the LOS for this segment would remain at LOS D, regardless of the Proposed Action.

Reuse-generated traffic on SH 183 would increase the peak hour volumes by 1,200 vehicles over the No-Action/Realignment Alternative. The LOS would decrease from LOS B at closure to LOS D by the year 2013 along the section of SH 183 adjacent to the base. As noted in Section 3.7 this roadway is identified in Mobility 2010 for widening; however, no specific plans or timetables exist for the improvement.

Reuse-generated traffic would increase the peak hour volumes on SH 199 by 100 vehicles over the No-Action/Realignment Alternative in the year 2013. This increase would not change the projected LOS. With the planned improvements to SH 199, the roadway would operate at LOS B in 2013.

Local roadways operate at LOS D or better. Spur 341, which provides access from Interstate 30 to AF Plant #4, would continue to operate at LOS B through the year 2013. The LOS on White Settlement Road and Clifford Street is not anticipated to change from their LOS B. Roaring Springs Road is projected to have a 1,100 vehicle increase over the No-Action/Realignment Alternative. The roadway would continue to operate at LOS D through 2013.

The Proposed Action assumes that on-base roadways would be used in the short term during the construction period. As part of the eventual site development plan, internal circulation must accommodate the intensity of vehicular and pedestrian activities and provide an acceptable LOS, including access from the local road network. Redevelopment plans are expected to incorporate internal circulation requirements that meet local planning objectives.

**4.7.2.2 Air Transportation.** The presence of aircraft operations due to FBOP activities at NAS Fort Worth is the only aviation-related difference between the Proposed Action and the No-Action/Realignment Alternative. The additional civilian aviation activity at NAS Fort Worth is not expected to affect air transportation in the ROI. The air transportation effects for the Proposed Action are as described for the No-Action/Realignment Alternative.

**4.7.2.3 Other Transportation Modes.** Because none of the alternatives assumes direct use of the local railroads, direct effects on the rail system are expected to be minimal.

#### **4.7.3 Mixed Use Alternative**

**4.7.3.1 Roadways.** Four access points to the base were used to distribute traffic generated by the Mixed Use Alternative. It is estimated that approximately 44,550 average daily trips (including 37,550 civilian reuse trips) will be generated by the Mixed Use Alternative. The numbers of estimated trips generated by on-site development at various phases of reuse are depicted in Table 4.7-1.

Reuse-generated traffic on Interstate 30 between SH 183 and Interstate 820 would increase the peak hour volume by 450 vehicles over the No-Action/Realignment Alternative. This increase would result in a LOS of C.

On Interstate 30, between SH 183 and Camp Bowie Boulevard, traffic generated by the reuse activities would increase daily traffic volumes by 250 vehicles over the No-Action/Realignment Alternative in the year 2013. This increase would not affect the projected LOS under the No-Action/Realignment Alternative. The roadway would continue to operate at LOS D in 2013.

Reuse-generated traffic on Interstate 820 would increase the peak hour volume by less than 100 vehicles. This increase, along with the No-Action/Realignment Alternative, would not result in a change in the LOS of C.

Reuse-generated traffic on SH 183 would increase the peak hour volume by 1,650 vehicles. LOS is expected to decrease from LOS B under the No-Action/Realignment Alternative to LOS D by the year 2013 along the section of SH 183 adjacent to the base. As noted in Section 3.7, this roadway is identified in Mobility 2010 for widening; however, no specific plans or timetable exist for the improvement.

Reuse-generated traffic would increase the peak hour volume on SH 199 by 150 vehicles over the No-Action/Realignment Alternative in the year 2013. With the planned improvements to SH 199, the roadway would operate at LOS B.

Local roadways would operate at LOS D or better. Spur 341, which provides access from Interstate 30 to AF Plant #4, would continue to operate at LOS B through the year 2013. The LOS on White Settlement Road and Clifford Street is not anticipated to change from their LOS B. Roaring Springs Road is projected to have a 150 vehicle increase over the

No-Action/Realignment Alternative in 2013. The roadway would continue to operate at LOS D through 2013.

The Mixed Use Alternative assumes that on-base roadways would be used in the short term during the construction period. As part of the eventual site development plan, internal circulation must accommodate the intensity of vehicular and pedestrian activities and provide an acceptable LOS, including access from the local road network. Redevelopment plans are expected to incorporate internal circulation requirements that meet local planning objectives.

**4.7.3.2 Air Transportation.** The additional civilian aircraft activity over the No-Action/Realignment Alternative would not affect the transportation of passengers or cargo to and from the ROI. Effects to the region's air transportation would, therefore, be similar to those described under the No-Action/Realignment Alternative.

**4.7.3.3 Other Transportation Modes.** Because none of the alternatives assumes direct use of the local railroads, direct effects on the rail system are expected to be minimal.

## **4.8 UTILITIES**

This study characterizes the type of utility use and subsequent infrastructure changes that would be required under each alternative. The specific on-base infrastructural improvements needed and the associated costs with such improvements would be directly or indirectly borne by the future site developer(s). A more detailed discussion of the effects of the Proposed Action and the alternatives is in the Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas.

### **4.8.1 No-Action/Realignment Alternative**

A summary of utility consumption changes associated with the No-Action/Realignment Alternative is shown in Table 4.8-1. Under this alternative, the increased use of water, wastewater treatment, solid waste disposal, electricity, and natural gas consumption would be less than 1.0 percent of the use projected under post-closure conditions through the year 2013.

The increased population and resulting increase in utility demand of the No-Action/Realignment Alternative would be met by large regional utility systems that have already anticipated growth rates. Adequate capacity would be available to meet the increased demands in the short term. Planning efforts have been programmed by water and wastewater purveyors to include improvements to handle increased loads through the year 2010. Solid waste management agencies are developing a plan to provide future

Table 4.8-1. Total Projected Daily Utility Use in the Region of Influence

	1998			2003			2013		
	Total ROI	Reuse Related	Percent Increase <sup>(a)</sup>	Total ROI	Reuse Related	Percent Increase <sup>(a)</sup>	Total ROI	Reuse Related	Percent Increase <sup>(a)</sup>
<b>Water Consumption (MGD)</b>									
Post-closure Conditions	172.1			188.5			233.0		
No-Action/Realignment Alternative	173.0	0.9	0.5	189.4	0.9	0.4	233.9	0.9	0.4
Proposed Action	173.4	1.3	0.7	189.9	1.4	0.7	234.4	1.4	0.6
Mixed Use Alternative	173.4	1.3	0.7	189.8	1.3	0.7	234.6	1.6	0.7
<b>Wastewater Treatment (MGD)</b>									
Post-closure Conditions	133.4			141.7			157.2		
No-Action/Realignment Alternative	133.9	0.5	0.4	142.2	0.5	0.4	157.7	0.5	0.3
Proposed Action	134.3	0.9	0.7	142.6	0.9	0.7	158.2	1.0	0.6
Mixed Use Alternative	134.2	0.8	0.6	142.6	0.9	0.6	158.3	1.1	0.7
<b>Solid Waste Disposal (tons/day)</b>									
Post-closure Conditions	5,211			5,745			6,983		
No-Action/Realignment Alternative	5,230	19	0.4	5,764	19	0.3	7,002	19	0.3
Proposed Action	5,235	24	0.5	5,772	27	0.5	7,013	30	0.4
Mixed Use Alternative	5,239	28	0.5	5,778	33	0.6	7,025	42	0.6
<b>Electrical Consumption (MWH/day)</b>									
Post-closure Conditions	38,473			41,446			48,100		
No-Action/Realignment Alternative	38,582	109	0.3	41,555	109	0.3	48,209	109	0.2
Proposed Action	38,659	186	0.5	41,645	199	0.5	48,312	212	0.4
Mixed Use Alternative	38,628	155	0.4	41,621	175	0.4	48,310	210	0.4
<b>Natural Gas Consumption (MMCF/day)</b>									
Post-closure Conditions	71.2			76.7			89.0		
No-Action/Realignment Alternative	71.6	0.4	0.6	77.0	0.3	0.4	89.4	0.4	0.5
Proposed Action	72.7	1.5	2.1	78.4	1.7	2.1	90.8	1.8	2.0
Mixed Use Alternative	72.4	1.2	1.6	78.1	1.4	1.8	90.9	1.9	2.1

Note: (a) Percent increase over post-closure conditions.

MGD = million gallons per day.

MWH = megawatt-hours.

ROI = Region of Influence.



landfill space. Electric and natural gas service interruptions are not anticipated as a result of this alternative.

The gross tax receipts that the city of Westworth Village receives from the sale of electricity at Carswell AFB may decline depending on the configuration of the distribution system that provides electricity to the base once redevelopment occurs.

#### **4.8.2 Proposed Action**

A summary of utility consumption changes associated with the Proposed Action is shown in Table 4.8-1. The increases in utility use through the year 2013 would be less than 1.0 percent of the use projected under post-closure conditions, with the exception of natural gas consumption. Natural gas consumption is projected to increase 2.0 percent. Gross tax receipts passed on to the city of Westworth Village would be greater than the No-Action/Realignment Alternative.

Utility demands are slightly greater than the No-Action/Realignment Alternative as a result of the additional civilian reuse of the base. Potable water and wastewater demands are not anticipated to exceed the demands placed on the utility systems. Electric and natural gas service interruptions are not anticipated as a result of the Proposed Action.

#### **4.8.3 Mixed Use Alternative**

A summary of utility consumption changes associated with the Mixed Use Alternative is shown in Table 4.8-1. The increases in utility use through the year 2013 would be less than 1.0 percent of the use projected under post-closure conditions, with the exception of natural gas consumption. Natural gas consumption is projected to increase 2.1 percent over post-closure conditions. Gross tax receipts passed on to the city of Westworth Village may be greater than the Proposed Action.

Utility demands are slightly greater than the Proposed Action as a result of the mix of land uses. Potable water and wastewater demands are not anticipated to exceed the demands placed on the utility systems. Electric and natural gas service interruptions are not anticipated as a result of this alternative.

### **4.9 OTHER LAND USE CONCEPTS**

This study performed an in-depth analysis only for those reuse options that, as a whole, provide an integrated plan for future site development. The other land use concepts described in Section 1.4.5 could occur on a piecemeal basis and would, therefore, selectively enhance or detract from site redevelopment. A descriptive treatment of these potential effects is

presented in this section (and summarized in Table 4.9-1). The potential effects of this land use concept are described in relation to their net effects on the Proposed Action and other alternatives.

**Health and Human Services.** The concept involves renovating approximately 20 housing units located along the east side of the Kings Branch parcel for use as housing for the handicapped. It is assumed that the average household size would be 2.5 persons. The average household size for the community of Westworth Village in which the houses are located is 2.9. As such, this would represent a slight reduction (of eight persons) over the number of persons that could be accommodated in the same number of conventional housing units under the Proposed Action or Mixed Use Alternative. Under the No-Action/Realignment Alternative, there would be an increase of approximately 50 additional residents. This small reduction in site-related persons would not have a measurable effect on community services and resources. It is unlikely that there would be an identifiable difference in the workforce associated with either action. Under the Proposed Action and the Mixed Use Alternative, these same housing units would either be demolished or removed from the site and replaced with newly constructed units.

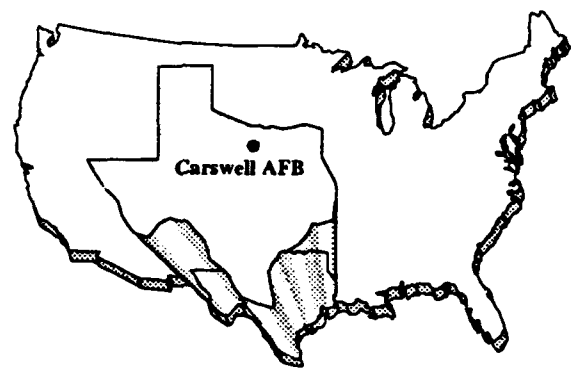
**Retained Residential Areas.** Under this concept, approximately 550 Carswell AFB housing units would be converted for civilian reuse. The residential land use areas would include the single-family units in Kings Branch, the single-family units along SH 183, and 13 individual single-family units scattered throughout the golf course. The residential units could be renovated to provide for single-family residences as well as potential special housing needs, including public-assisted, retirement, low- to moderate-income, or homeless-assisted housing. For analysis purposes, it is assumed the residential areas would be fully occupied within 10 years after base disposal with up to 1,375 residents. Under the Proposed Action, direct operations employment would decrease by 3,800 jobs. Similarly, if implemented with the Mixed Use Alternative, 3,460 direct operations jobs would be lost. Under the No-Action/Realignment Alternative, employment would not be affected.

As on-site employment (and thus earnings) is changed by these independent proposals, either positively or negatively, local and regional secondary employment effects of the various alternatives also would change. The degree to which these secondary effects are altered would depend on a number of factors, including the differences in: non-payroll spending associated with independent proposals compared to displaced industrial or commercial endeavors, construction costs among the various land uses, and the propensity to consume local goods and services by employees and occupants of the proposed facilities compared to those displaced.

**Table 4.9-1. Socioeconomic Effects of Other Land Use Concepts**

Agency/Proposal	Employment/Population	Alternative	Change in Alternative
Health and Human Services	0 direct employment 50 on-base population	No-Action/Realignment	Reduced caretaker status land. No change to employment.
		Proposed Action	Increase of 50 on-base population.
		Mixed Use	Reduced residential and public facilities/recreation land. Negligible changes to employment. Decrease of 8 on-base population. Reduced residential land. Negligible change to employment. Decrease of 8 on-base population.
Retained Residential Areas	0 direct employment 1,375 on-base population	No-Action/Realignment	Reduced caretaker status land. Negligible change to employment. Increase of 1,375 on-base population
		Proposed Action	Replaces commercial land. Decrease of 3,800 direct operations jobs.
		Mixed Use	Increase of 1,050 on-base population. Reduced commercial and office/industrial park land. Decrease of 60 direct office/industrial park jobs and 3,400 direct commercial jobs. Increase of 55 on-base population.

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## **CHAPTER 5**

# **CONSULTATION AND COORDINATION**

## **5.0 CONSULTATION AND COORDINATION**

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The federal, state, and local agencies and private agencies/organizations that were contacted during the course of preparing this Socioeconomic Impact Analysis Study are listed below:

### **FEDERAL AGENCIES**

United States Department of Commerce, Bureau of the Census  
United States Department of Commerce, Bureau of Economic Analysis  
United States Department of Justice, Federal Bureau of Prisons  
United States Department of Labor, Bureau of Labor Statistics

### **STATE AGENCIES**

Texas Commission on Fire Protection  
Texas Department of Transportation  
Texas Employment Commission  
Texas State Board of Dental Examiners  
Texas State Board of Insurance  
Texas State Board of Medical Examiners  
Texas State Board of Vocational Nurse Examiners  
Texas Water Development Board

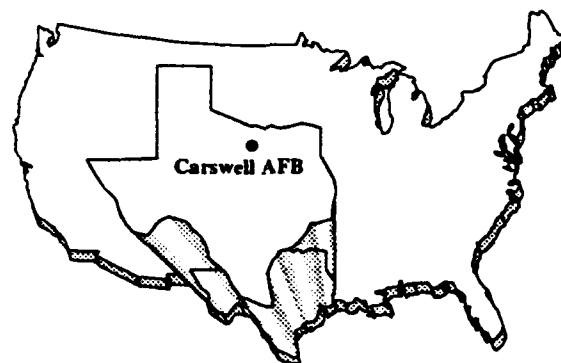
### **LOCAL/REGIONAL AGENCIES**

Arlington Heights High School  
Benbrook City Manager's Office  
Benbrook Finance Department  
Benbrook Fire Department  
Benbrook Police Department  
Castleberry Independent School District  
Dallas-Fort Worth Hospital Council  
Fort Worth Department of Transportation and Public Works  
Fort Worth Finance Department  
Fort Worth Fire Department  
Fort Worth Independent School District  
Fort Worth Office of Economic Development  
Fort Worth Personnel Department  
Fort Worth Planning Department  
Fort Worth Police Department  
Fort Worth Water Department  
Lake Worth City Administrator's Office  
Lake Worth Finance Department  
Lake Worth Fire Department  
Lake Worth Independent School District

Lake Worth Police Department  
North Central Texas Council of Governments  
River Oaks, City of  
River Oaks, Fire Department  
River Oaks, Police Department  
Sansom Park, City of  
Sansom Park Fire Department  
Sansom Park Police Department  
Tarrant County Budget Department  
Tarrant County Fire Marshall  
Tarrant County Sheriff's Department  
Westover Hills Fire Department  
Westover Hills Mayor's Office  
Westover Hills Police Department  
Westworth Village, City Secretary  
Westworth Village Finance Department  
Westworth Village Fire Department  
Westworth Village Police Department  
White Settlement Finance Department  
White Settlement Fire Department  
White Settlement Independent School District  
White Settlement Personnel Department  
White Settlement Police Department  
White Settlement Public Works Department

#### **PRIVATE ORGANIZATIONS**

Carswell Redevelopment Authority  
Fort Worth Chamber of Commerce  
General Dynamics Corporation  
James Toal Company  
Lone Star Gas Company  
Texas Utilities Company  
Waste Management, Inc.



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## **CHAPTER 6**

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## **6.0 LIST OF PREPARERS AND CONTRIBUTORS**

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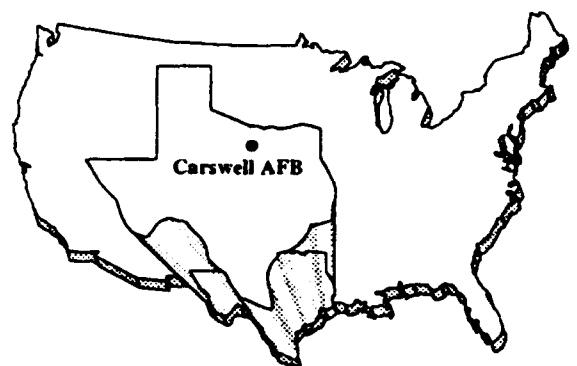
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## **CHAPTER 7**

## **REFERENCES**

## 7.0 REFERENCES

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- Ballard, B., 1992. Personal communication with Bob Ballard, Waste Management Inc.
- Benbrook, City of, 1988. Comprehensive Annual Financial Report for October 1, 1987 - September 30, 1988, Combined Statement of Revenues, Expenditures, and Changes in Fund Balance - All Governmental Fund Types - For the Year Ended September 30, 1988.
- Benbrook, City of, 1989. Comprehensive Annual Financial Report for October 1, 1988 - September 30, 1989, Combined Statement of Revenues, Expenditures, and Changes in Fund Balance - All Governmental Fund Types - For the Year Ended September 30, 1989 (With comparative totals for the year ended September 30, 1988).
- Benbrook, City of, 1990. Comprehensive Annual Financial Report for October 1, 1989 - September 30, 1990, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances - All Governmental Fund Types - For the Year Ended September 30, 1990 (With comparative totals for the year ended September 30, 1989).
- Benbrook, City of, 1991. Comprehensive Annual Financial Report for October 1, 1990 - September 30, 1991, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances - All Governmental Fund Types - For the Year Ended September 30, 1991 (With comparative totals for the year ended September 30, 1990).
- Berry, S., 1992. Personal communication with Sam Berry, Mayor, Town of Westover Hills.
- Bloodworth, F.G., 1992. Personal communication with F.G. Bloodworth, Chief, Water Uses Section for the Texas Water Development Board.
- Bounds, P., 1992. Personal communication with Paul Bounds, Director of Public Works for the City of White Settlement, Texas.
- Camp Dresser & McKee Inc., 1990. Water Supply Master Plan for the City of Fort Worth.
- Carter & Burgess, 1968. Comprehensive Plan Report Number Two, White Settlement, Texas, February.
- Cartwright, J.V., and R.M. Beemiller, 1980. The Regional Economic Impact of Military Base Spending, U.S. Bureau of Economic Analysis, Regional Economic Analysis Division, U.S. Department of Commerce for the President's Economic Adjustment Committee, Office of Economic Adjustment, Office of the Assistant Secretary of Defense, Washington, DC, November.
- Castleberry Independent School District, 1988a. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, Budget (GAAP BASIS) and Actual, All Governmental Fund Types, Year Ended August 31, 1988.

Castleberry Independent School District, 1988b. General Fund Federal Source Revenues, 1987-88.

Castleberry Independent School District, 1989a. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, Budget (GAAP BASIS) and Actual, All Governmental Fund Types, Year Ended August 31, 1989.

Castleberry Independent School District, 1989b. General Fund Federal Source Revenues, 1988-89.

Castleberry Independent School District, 1990a. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, Budget (GAAP BASIS) and Actual, All Governmental Fund Types, Year Ended August 31, 1990.

Castleberry Independent School District, 1990b. General Fund Federal Source Revenues, 1989-90.

Castleberry Independent School District, 1991a. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, Budget (GAAP BASIS) and Actual, All Governmental Fund Types, Year Ended August 31, 1991.

Castleberry Independent School District, 1991b. General Fund Federal Source Revenues, 1990-91.

Castleberry Independent School District, 1992. 1991-92 Budget Requests by Campus/Organization as of April 17, 1992.

City of Benbrook, see Benbrook, City of.

City of Fort Worth, see Fort Worth, City of.

City of Fort Worth Fire Department, 1991a. List of Equipment for the City of Fort Worth Fire Department.

City of Fort Worth Fire Department, 1991b. List of Fire Stations Associated with City of Fort Worth Fire Department.

City of Fort Worth Police Department, n.d. Basic Recruit Class #84, December 9, 1991 through May 1, 1992.

City of Fort Worth Police Department, 1990. 314.00- 315.00 Arrest Procedures, revised July.

City of Fort Worth Police Department, 1992. Department Vehicles Associated with the City of Fort Worth Police Department.

City of Lake Worth, see Lake Worth, City of.

City of Sansom Park, see Sansom Park, City of.

City of Westworth Village, see Westworth Village, City of.

City of White Settlement, see White Settlement, City of.

Cunningham, J., 1992. Personal communication with Jack Cunningham, Manager Customer Relations for Lone Star Gas Company, Fort Worth, Texas.

DeLatorre, C., 1992. Personal communication with Carlos DeLatorre, Community & Customer Service Manager for TU Electric, Fort Worth, Texas.

Dinyarian, N., 1992. Personal communication with Nowzar Dinyarian, City of Fort Worth Water Department, Engineering Division, Texas.

Fort Worth, City of, 1988a. Comprehensive Annual Financial Report for the Year Ended September 30, 1988, Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Government Fund Types and Expendable Trust Funds, Year Ended September 30, 1988.

Fort Worth, City of, 1988b. Village Creek Wastewater Treatment Plant, October.

Fort Worth, City of, 1989. Comprehensive Annual Financial Report for the Fiscal Year Ended September 30, 1989, Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Government Fund Types and Expendable Trust Funds, Year Ended September 30, 1989.

Fort Worth, City of, 1990. Comprehensive Annual Financial Report for the Fiscal Year Ended September 30, 1990, Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Government Fund Types and Expendable Trust Funds, Year Ended September 30, 1990.

Fort Worth, City of, 1991. Comprehensive Annual Financial Report for the Year Ended September 30, 1991, Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Government Fund Types and Expendable Trust Funds, Year Ended September 30, 1991.

Fort Worth, City of, 1992. Water and Wastewater Capital Improvements Plan Semi-Annual Progress Report, December 1991.

Fort Worth Chamber of Commerce, n.d. Map of Independent School Districts in Tarrant County.

Fort Worth Chamber of Commerce, 1989. Area Profiles for Fort Worth and Tarrant County, Texas, Basic Demographic Series, Population, Households, Employment, A Report Compiled in May 1989 by the Economic Development Division of the Fort Worth Chamber of Commerce, Fort Worth, Texas Area Profile Demographic Area 4.

Fort Worth Chamber of Commerce, 1992. Educational Opportunities in Fort Worth and Tarrant County, A Summary of Public Schools, Private Schools, and Colleges and Universities.



Fort Worth Independent School District, 1989. Comprehensive Annual Financial Report, Fiscal Year Ended August 31, 1989.

Fort Worth Independent School District, 1990. Comprehensive Annual Financial Report, Fiscal Year Ended August 31, 1990.

Fort Worth Independent School District, 1991a. Letter from Eugene J. Gutierrez, Associate Superintendent, June 17.

Fort Worth Independent School District, 1991b. Letter from Frank L. Fanning, Administrator, Federal & State Compensatory Education Programs, May 31.

Fort Worth Independent School District, 1992. 1991-1992 Fiscal Year Official Budget.

Fort Worth Trendicator, 1992. January-March.

Fort Worth Water Department, n.d. Water Main Map.

Fort Worth Water Department, 1990. 1989-1990 Statistical Report Fort Worth Water Department.

Gibbs, Bonnie, 1992. Personal communication with Bonnie Gibbs, City Administrator for City of River Oaks, regarding Police Department information.

Government Printing Office, 1992. Economic Report of the President, February.

Hannah, 1992. Personal communication with Captain Hannah, Acting Commander, Carswell AFB Security Police.

James Toal Company, 1992. A Draft of the "Draft Carswell Reuse Plan," March.

Lake Worth, City of, 1988. Report of Examination, September 30, 1988, Combined Statement of Revenues, Expenditures and Changes in Fund Balance, All Governmental Fund Types for the Year Ended September 30, 1988.

Lake Worth, City of, 1989. Report of Examination, September 30, 1989, Combined Statement of Revenues, Expenditures and Changes in Fund Balance, All Governmental Fund Types for the Year Ended September 30, 1989.

Lake Worth, City of, 1990. Report of Examination, September 30, 1990, Combined Statement of Revenues, Expenditures and Changes in Fund Balance, All Governmental Fund Types for the Year Ended September 30, 1990.

Lake Worth, City of, 1991. Report of Examination, September 30, 1991, Combined Statement of Revenues, Expenditures and Changes in Fund Balance, All Governmental Fund Types for the Year Ended September 30, 1991.

Lake Worth Independent School District, 1989a. 1988-89 Budget.

- Lake Worth Independent School District, 1989b. 1989-1990 Budget #1-Uncut-Proposed Expenditures and Estimated Revenues, July 17, 1989.
- Lake Worth Independent School District, 1989c. 1989-1990 Budget #2-Proposed Cuts-Proposed Expenditures and Estimated Revenues, July 19, 1989.
- Lake Worth Independent School District, 1992. Letter from Dale Pitts, Superintendent, July.
- Lewis, N., 1992. Personal communication with Chief Lewis, Westworth Village Police Department.
- Mai, S., 1992. Personal communication with Saadia Mai, Manager of Resource Conservation for North Central Texas Council of Governments.
- Manchester, C., 1992. Personal communication with Charles Manchester, Sargeant, Supervisor of Communications Center, Tarrant County Sheriff's Department.
- Means, R.S., Company, 1991a. Means Building Construction Cost Data 1992 (50th annual ed.), Kingston, Massachusetts.
- Means, R.S., Company, 1991b. Means Square Foot Costs 1992 (13th annual ed.), Kingston, Massachusetts.
- Military Traffic Management Command, Transportation Engineering Agency, 1977. Traffic Engineering Study: Carswell AFB, MTMC Report TE-77-6, October.
- National Association of Federally Impacted Schools, 1990. The National Association of Federally Impacted Schools (pamphlet).
- Neuhaus, R., 1992. Personal communication with Richard Neuhaus, Senior Administrative Analyst, Fort Worth Fire Department.
- North Central Texas Council of Governments, 1990. Final Census 4/1/90 City Populations for Cities over 1,000 in Tarrant County.
- North Central Texas Council of Governments, 1991a. Assuring Treatment and Disposal Capacity 1991-92 Interim Regional Solid Waste Management Plan.
- North Central Texas Council of Governments, 1991b. Mobility 2010, The Regional Transportation Plan for North-Central Texas.
- North Central Texas Council of Governments, 1991c. 1992 Transportation Improvement Program for the Dallas-Fort Worth Metropolitan Area.
- North Central Texas Council of Governments, 1992. 1992 Current Population Estimates.
- NPA Data Services, Inc., 1991. Key Indicators of County Growth, 1970-2010, 1991 Edition.

- Ostrosky, M., 1992. Personal communication with Michael Ostrosky, Water and Sewer Superintendent for the city of White Settlement, Texas.
- Pierce, Goodwin, Alexander, 1986. Comprehensive Plan Carswell Air Force Base, May.
- Praylor, D., 1992. Personal communication with Deputy Fire Marshall Praylor, Tarrant County Rural Fire Prevention District #1.
- R.L. Thompson Strategic Hospital, 1990. 1990 Workload/Demographic Data.
- R.L. Thompson Strategic Hospital, 1991. Quarterly Management Summary, 3rd Quarter Fiscal Year 1991, Medical Research Management.
- R.L. Thompson Strategic Hospital, 1992a. CHAMPUS Costs and Users in the Historical Carswell AFB Catchment Area, June.
- R.L. Thompson Strategic Hospital, 1992b. Executive Snapshot of the R.L. Thompson Strategic Hospital 7th Wing, Carswell AFB Texas, April.
- R.L. Thompson Strategic Hospital, 1992c. Quarterly Management Summary, 1st Quarter Fiscal Year 1992, Medical Research Management.
- Richardson, B., 1992. Personal communication with Mr. Richardson, Director of Public Safety, Benbrook Police Department.
- Russell, L., 1992. Personal communication with Lester Russell, Utility Manager for the City of Sansom Park, Texas.
- Sansom Park, City of, 1988. Report of Examination, September 30, 1988. General Fund, Condensed Statement of Actual and Budgeted Revenue, Transfers and Expenditures.
- Sansom Park, City of, 1989. Report of Examination, September 30, 1989. General Fund, Condensed Statement of Actual and Budgeted Revenue, Transfers and Expenditures.
- Sansom Park, City of, 1990. Report of Examination, September 30, 1990. General Fund, Condensed Statement of Actual and Budgeted Revenue, Transfers and Expenditures.
- Sansom Park, City of, 1991. Report of Examination, September 30, 1991. Statement of Revenues, Expenditures and Changes in Fund Balance - Budget and Actual - General Fund.
- Scanlan, J., 1992. Personal communication with James Scanlan, Assistant Director for the City of Fort Worth Water Department, Texas.
- Staggs, K., 1992. Personal communication with Ken Staggs, Utility Plant Operator for the City of River Oaks, Texas.

- Tarrant County, 1988. Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds, Year Ended September 30, 1988.
- Tarrant County, 1989. Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds, Year Ended September 30, 1989.
- Tarrant County, 1990. Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds, Year Ended September 30, 1990.
- Tarrant County, 1991. Combined Statement of Revenues, Expenditures and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds, Year Ended September 30, 1991.
- Texas Christian University, 1992. Defense Budget Cutbacks: Impacts on Small Businesses in Tarrant County, M.J. Neeley School of Business, MBA Program.
- Texas Department of Highways and Public Transportation, 1992. 1991 Traffic Count Maps.
- Texas Employment Commission, 1991. 1980-1991 Civilian Labor Force Estimates, Johnson, Parker and Tarrant Counties.
- Texas State Board of Medical Examiners, 1992. Demographics of Texas Physicians, May.
- The Business Press, 1992. "1992 Health Care Resource for Tarrant County Businesses," A Special Section of the Business Press, March.
- Town of Westover Hills, see Westover Hills, Town of.
- Transportation Research Board, 1985. Highway Capacity Manual & Special Report 209, National Research Council, National Academy of Sciences, Washington, DC.
- Tsivis, N., 1992. Personal communication with Nancy Tsivis, Water Department for the City of Westworth Village.
- U.S. Air Force, 1987. Economic Resource Impact Statement, 7th Bombardment Wing, Carswell Air Force Base.
- U.S. Air Force, 1988. Economic Resource Impact Statement, 7th Bombardment Wing, Carswell Air Force Base.
- U.S. Air Force, 1989a. Contingency Response Plan, BCE 411-89, June.
- U.S. Air Force, 1989b. Economic Resource Impact Statement, 7th Bombardment Wing, Carswell Air Force Base.

- U.S. Air Force, 1990. Carswell Air Force Base Economic Impact Summary, Fiscal Year 1990.
- U.S. Air Force, 1991. Economic Resource Impact Statement, 7th Wing Carswell AFB, September 30.
- U.S. Air Force, 1992a. Carswell AFB Military Manning May 92-Oct 92, Consolidated Base Personnel Office, Carswell AFB.
- U.S. Air Force, 1992b. Firefighting and Support Vehicle Status Report, Carswell AFB, TX 76127-5000, Carswell AFB Fire Department, June 1.
- U.S. Air Force, 1992c. 1991-92 Operations and Civil Service Budgeted Manpower as of 10-10-91, Consolidated Base Personnel Office, Carswell AFB.
- U.S. Air Force, 1992d. 301st Reserve Pay Office, Past and Proposed Staffing 301st Fighter Wing (AFRES) Carswell AFB.
- U.S. Air Force, 1992e. 25th Strength Report - Military Personnel Strength of 7 MSSQ Carswell AFB, 5/25/92, Consolidated Base Personnel Office, Carswell AFB.
- U.S. Bureau of the Census, 1970. Census of Population and Housing, 1970, Texas.
- U.S. Bureau of the Census, 1973. City and County Data Book, 1972.
- U.S. Bureau of the Census, 1980. Census of Population and Housing, 1980, Texas.
- U.S. Bureau of the Census, 1981. Census of Population and Housing, 1981, Texas.
- U.S. Bureau of the Census, 1982a. Census of Population and Housing, 1982, Texas.
- U.S. Bureau of the Census, 1982b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1981.
- U.S. Bureau of the Census, 1983a. Census of Population and Housing, 1983, Texas.
- U.S. Bureau of the Census, 1983b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1982.
- U.S. Bureau of the Census, 1984a. Census of Population and Housing, 1984, Texas.
- U.S. Bureau of the Census, 1984b. City and County Data Book, 1983.
- U.S. Bureau of the Census, 1984c. Housing Units Authorized by Building Permit and Public Contracts, Annual 1983.
- U.S. Bureau of the Census, 1985a. Census of Population and Housing, 1985, Texas.

- U.S. Bureau of the Census, 1985b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1984.
- U.S. Bureau of the Census, 1986a. Census of Population and Housing, 1986, Texas.
- U.S. Bureau of the Census, 1986b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1985.
- U.S. Bureau of the Census, 1987a. Census of Population and Housing, 1987, Texas.
- U.S. Bureau of the Census, 1987b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1986.
- U.S. Bureau of the Census, 1988a. Census of Population and Housing, 1988, Texas.
- U.S. Bureau of the Census, 1988b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1987.
- U.S. Bureau of the Census, 1989a. Census of Population and Housing, 1989, Texas.
- U.S. Bureau of the Census, 1989b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1988.
- U.S. Bureau of the Census, 1990a. Census of Population and Housing, 1990, Texas.
- U.S. Bureau of the Census, 1990b. Housing Units Authorized by Building Permit and Public Contracts, Annual 1989.
- U.S. Bureau of the Census, 1991. Housing Units Authorized by Building Permit and Public Contracts, Annual 1990.
- U.S. Bureau of Economic Analysis, 1989a. BEA Employment/Income Timeseries - Short, Employment and Population, Johnson County, Texas, 1969-1989, Regional Economic Information System.
- U.S. Bureau of Economic Analysis, 1989b. BEA Employment/Income Timeseries - Short, Employment and Population, Parker County, Texas, 1969-1989, Regional Economic Information System.
- U.S. Bureau of Economic Analysis, 1989c. BEA Employment/Income Timeseries - Short, Employment and Population, State of Texas, 1969-1989, Regional Economic Information System.
- U.S. Bureau of Economic Analysis, 1989d. BEA Employment/Income Timeseries - Short, Employment and Population, Tarrant County, Texas, 1969-1989, Regional Economic Information System.

- U.S. Bureau of Economic Analysis, 1989e. BEA Employment/Income Timeseries - Short, Income, Johnson County, Texas, 1969-1989, Regional Economic Information System.
- U.S. Bureau of Economic Analysis, 1989f. BEA Employment/Income Timeseries - Short, Income, Parker County, Texas, 1969-1989, Regional Economic Information System.
- U.S. Bureau of Economic Analysis, 1989g. BEA Employment/Income Timeseries - Short, Income, State of Texas, 1969-1989, Regional Economic Information System.
- U.S. Bureau of Economic Analysis, 1989h. BEA Employment/Income Timeseries - Short, Income, Tarrant County, Texas, 1969-1989, Regional Economic Information System.
- U.S. Bureau of Economic Analysis, 1991a. BEA Timeseries - Detailed, Johnson County, Texas, Total Full-time and Part-time Employment, 1970, 1980, 1987, 1988, 1989, Table CA25, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.
- U.S. Bureau of Economic Analysis, 1991b. BEA Timeseries - Detailed, Parker County, Texas, Total Full-time and Part-time Employment, 1970, 1980, 1987, 1988, 1989, Table CA25, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.
- U.S. Bureau of Economic Analysis, 1991c. BEA Timeseries - Detailed, State of Texas, Total Full-time and Part-time Employment, 1970, 1980, 1987, 1988, 1989, Table CA25, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.
- U.S. Bureau of Economic Analysis, 1991d. BEA Timeseries - Detailed, Tarrant County, Texas, Total Full-time and Part-time Employment, 1970, 1980, 1987, 1988, 1989, Table CA25, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.
- U.S. Bureau of Economic Analysis, 1991e. BEA Timeseries - Detailed, Johnson County, Texas, Personal Income by Major Source and Earnings by Major Industry, 1970, 1980, 1987, 1988, 1989, Table CA5, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.
- U.S. Bureau of Economic Analysis, 1991f. BEA Timeseries - Detailed, Parker County, Texas, Personal Income by Major Source and Earnings by Major Industry, 1970, 1980, 1987, 1988, 1989, Table CA5, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.

- U.S. Bureau of Economic Analysis, 1991g. BEA Timeseries - Detailed, State of Texas, Personal Income by Major Source and Earnings by Major Industry, 1970, 1980, 1987, 1988, 1989, Table CA5, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.
- U.S. Bureau of Economic Analysis, 1991h. BEA Timeseries - Detailed, Tarrant County, Texas, Personal Income by Major Source and Earnings by Major Industry, 1970, 1980, 1987, 1988, 1989, Table CA5, Regional Economic Information System, CD ROM, Regional Economic Measurement Division, Economic and Statistics Administration, U.S. Department of Commerce, May 2.
- U.S. Bureau of Economic Analysis, 1992. Table C5 and CA 25, Regional Economic Information System, CD-ROM, data released May 2.
- U.S. Bureau of Labor Statistics, 1991a. Labor Force Profile, Johnson County, Texas, 1988, 1989, 1990, 1991.
- U.S. Bureau of Labor Statistics, 1991b. Labor Force Profile, Parker County, Texas, 1988, 1989, 1990, 1991.
- U.S. Bureau of Labor Statistics, 1991c. Labor Force Profile, State of Texas, 1988, 1989, 1990, 1991.
- U.S. Bureau of Labor Statistics, 1991d. Labor Force Profile, Tarrant County, Texas, 1988, 1989, 1990, 1991.
- U.S. Council of Economic Advisors, 1991. Annual Report to the President.
- U.S. Department of Defense, 1991. Base Realignment and Closures; Report of the Defense Secretary's Commission on Base Realignment and Closure, Washington, DC, December.
- U.S. Department of Defense, Office of Economic Adjustment, 1990. Civilian Reuse of Former Military Bases, 1961-1990: Summary of Completed Military Base Economic Adjustment Projects, Washington, DC, April 2 - June.
- Wadkins, 1992. Personal communication with Chief Wadkins, Lake Worth Police Department.
- Welch, C., 1992. Personal communication with Clabe Welch, Superintendent, White Settlement Independent School District.
- Westover Hills, Town of, 1988. Financial Statements as of September 30, 1988 with Comparative Totals for 1987, General Fund Statement of Revenues, Expenditures, and Changes in Fund Balance - Budget and Actual for the Year Ended September 30, 1988.



Westover Hills, Town of, 1989. Financial Statements as of September 30, 1989 with Comparative Totals for 1988, General Fund Statement of Revenues, Expenditures, and Changes in Fund Balance - Budget and Actual for the Year Ended September 30, 1989.

Westover Hills, Town of, 1990. Financial Statements as of September 30, 1990 with Comparative Totals for 1989, General Fund Statement of Revenues, Expenditures, and Changes in Fund Balance - Budget and Actual for the Year Ended September 30, 1990.

Westover Hills, Town of, 1991. Financial Statements as of September 30, 1991 with Comparative Totals for 1990, General Fund Statement of Revenues, Expenditures, and Changes in Fund Balance - Budget and Actual for the Year Ended September 30, 1991.

Westworth Village, City of, 1988. Financial Report, September 30, 1988, Combined Statement of Revenues, Expenditures and Changes in Fund Balances - All Governmental Fund Types and Fiduciary Fund Type, Year Ended September 30, 1988.

Westworth Village, City of, 1989. Financial Report, September 30, 1989, Combined Statement of Revenues, Expenditures and Changes in Fund Balances - All Governmental Fund Types and Fiduciary Fund Type, Year Ended September 30, 1989.

Westworth Village, City of, 1990. Financial Report, September 30, 1990, Combined Statement of Revenues, Expenditures and Changes in Fund Balances - All Governmental Fund Types and Fiduciary Fund Type, Year Ended September 30, 1990.

Westworth Village, City of, 1991. Financial Report, September 30, 1991, Combined Statement of Revenues, Expenditures and Changes in Fund Balances - All Governmental Fund Types and Fiduciary Fund Type, Year Ended September 30, 1991.

White Settlement, City of, 1988. Comprehensive Annual Financial Report, Year Ended September 30, 1988, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds for the Fiscal Year Ended September 30, 1988 with Comparative Totals for the Fiscal Year Ended September 30, 1987.

White Settlement, City of, 1989. Comprehensive Annual Financial Report, Year Ended September 30, 1989, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds for the Fiscal Year Ended September 30, 1989 with Comparative Totals for the Fiscal Year Ended September 30, 1988.

White Settlement, City of, 1990. Comprehensive Annual Financial Report, Year Ended September 30, 1990, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds for the Fiscal Year Ended September 30, 1990 with Comparative Totals for the Fiscal Year Ended September 30, 1989.

White Settlement, City of, 1991. Comprehensive Annual Financial Report, Year Ended September 30, 1991, Combined Statement of Revenues, Expenditures, and Changes in Fund Balances, All Governmental Fund Types and Expendable Trust Funds for the Fiscal Year Ended September 30, 1991 with Comparative Totals for the Fiscal Year Ended September 30, 1990.

White Settlement Independent School District, 1988. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, All Government Fund Types and Similar Trust Funds, Year Ended August 31, 1988.

White Settlement Independent School District, 1989. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, All Government Fund Types and Similar Trust Funds, Year Ended August 31, 1989.

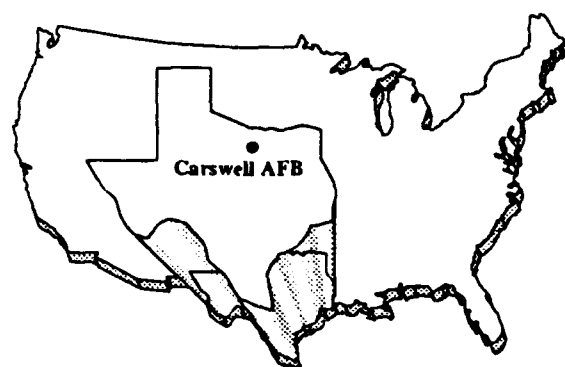
White Settlement Independent School District, 1990. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, All Government Fund Types, Year Ended August 31, 1990.

White Settlement Independent School District, 1991. Combined Statement of Revenues, Expenditures, and Changes in Fund Balance, All Government Fund Types, Year Ended August 31, 1991.

Winn, C., 1992. Personal communication with Clarence L. Winn, Superintendent, Castleberry Independent School District, June 23.

Young, M., 1992. Personal communication with Mark Young, Texas Department of Highways and Public Transportation, Arlington, Texas.

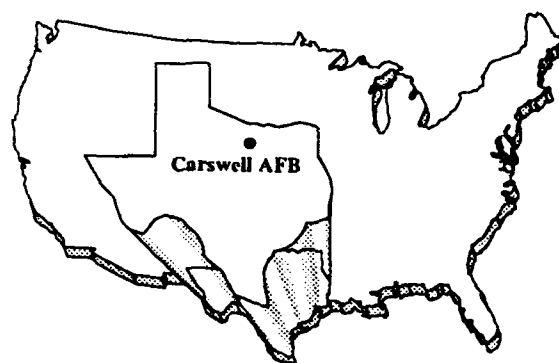
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## APPENDICES



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## APPENDIX A

## **APPENDIX A**

### **DATA SOURCES**

#### **Economic Activity**

Employment and earnings data by major industrial sector and per capita personal income were obtained for the years 1969 through 1989 from the Regional Economic Information System (U.S. Department of Commerce, 1990). Unpublished data on national output and employment by industrial sector were obtained for the years 1958 through 1989 from computer files of the Office of Economic Growth (U.S. Bureau of Labor Statistics, 1990). Indices for the conversion of current year dollars to constant 1989 dollars were provided in the Annual Report to the President by the U.S. Council of Economic Advisors (1991).

Data pertaining to labor force, employed and unemployed workers, and unemployment rates in the Fort Worth Metropolitan Statistical Area (MSA) were obtained from the U.S. Bureau of Labor Statistics (1990). This source provided additional information pertaining to trends in the major industrial sectors of the regional economy. Information concerning the largest employers in the Dallas/Fort Worth, Texas, region was obtained from local municipal planning departments and chambers of commerce publications. Data on recent and projected employment by census tract within the Fort Worth, Texas, MSA were obtained from the Bureau of Economic Analysis.

Data concerning Carswell Air Force Base (AFB) employment, payrolls, and spending within the region were obtained from Economic Resource Impact Statements (U.S. Air Force, 1987, 1988, 1989, 1990, 1991).

Data regarding employment, earnings and expenditures for the units assigned to Naval Air Station (NAS) Fort Worth under Base Realignment and Closure III were obtained from the appropriate personnel and contracts office.

#### **Population**

The principal source of population data for this study was the U.S. Bureau of the Census. The data examined included the final 1990 Census counts for counties and places (U.S. Bureau of the Census, 1991). Supplemental population data were available from the 1980 Census of Population (U.S. Bureau of the Census, 1982) and when compared with the 1990 data, showed the trend in population experienced in the region of influence. Population estimates for individual counties prepared by NPA Data Services, Inc. were used to indicate anticipated population changes in Johnson, Parker, and Tarrant counties over the next two decades. Data regarding the

residential distribution of base personnel were obtained from the Carswell AFB military and civilian personnel offices.

### **Housing**

The main source for data on housing characteristics was the 1990 Census of Population and Housing (U.S. Bureau of the Census, 1991). Additional housing data were obtained from the 1980 Census of Housing (U.S. Bureau of the Census, 1982). The 1980 and 1990 data were used to assess recent trends for several key housing characteristics.

Data found in the Current Construction Reports series provided information on housing units authorized by construction permits (U.S. Bureau of the Census, 1981, 1982a, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990). Supplemental housing data were provided by various other federal, state, local, community, and private-sector sources. Data concerning preclosure and reuse housing units on the base were obtained from the Carswell AFB Housing Office. Data for NAS Dallas housing were obtained from NAS Dallas.

### **Public Services**

Because of the jurisdiction-specific nature of the public services analysis, there was no single clearinghouse of data from which all pertinent and necessary information addressing government structure, public education, police and fire protection, and health care. Therefore, information regarding staffing levels, jurisdictional boundaries, degrees of use, equipment, and facilities for public service providers was obtained through personal communication with agency representatives or from documents published by these agencies. Information related to similar community services currently provided by the federal government within the boundaries of Carswell AFB was acquired directly from the base.

### **Public Finance**

Data sources for public finance included the most recent financial reports beginning with fiscal year 1988 and the 1992 year budget reports for the potentially affected local government units. The financial reports provided the actual amount of revenue collected and money spent in the jurisdictions and compared these amounts to budgeted levels. Budget reports were used to supplement financial reports as sources of specific property tax information and for projections of 1992 year revenues and expenditures.

### **Transportation**

Data regarding road and highway transportation including maps, circulation plans, highway improvement plans, and traffic volume counts, were

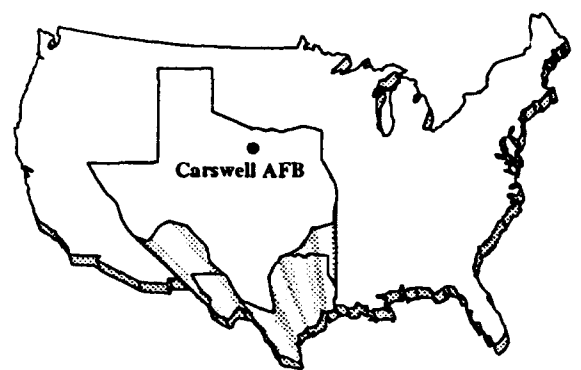
obtained from Carswell AFB, Texas State Department of Highways and Public Transportation, and the cities of Fort Worth and White Settlement. Data addressing private, passenger, and air cargo service in the region were acquired directly from representatives of airports serving the area and air transportation studies of the area. Information regarding rail transportation was obtained from local railroads.

#### **Utilities**

Base utilities data including historic consumption data, peak demand characteristics, storage and distribution capacities, and related information were obtained from the base civil engineering office. Public and private utility suppliers and related local agencies were also contacted to obtain historic consumption data, peak demand characteristics, storage and distribution capacities, and related information including projections of future utility demands for the particular service areas of each utility provider.



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## APPENDIX B

## **APPENDIX B**

### **METHODS**

This section presents methods used to evaluate preclosure and future socioeconomic conditions. The description of preclosure socioeconomic conditions includes important indicators that provide a basis for comparison to national trends, as well as to future conditions with and without the alternatives.

All changes associated with the Proposed Action and alternatives were considered effects. Closure conditions are defined to include the Operating Location, the White House Communications Agency, and activities of the 301st Fighter Wing, as specified in Chapter 3. The No-Action/Realignment Alternative is not considered equivalent to closure conditions since it includes not only Air Force Reserve units under closure conditions, but also the relocation of several Department of Defense (DOD) organizations from Naval Air Stations (NASs) in Dallas (Texas), Memphis (Tennessee), and Glenview (Illinois) that would not occur under closure conditions.

Historic data are used to define preclosure conditions and recent trends. Recent trends were analyzed to develop projections of future socioeconomic conditions that would result from base closure without reuse (closure conditions). Chapter 3 identifies potential beneficial or limiting factors within the region. Chapter 4 determines whether such factors may make the region either more or less susceptible to socioeconomic effects as a result of the alternatives.

#### **Region of Influence**

Definition of the region of influence (ROI) occurred in two steps. Initially, in support of the Base Closure and Realignment Commission in 1991, an ROI was defined for each of the 106 Air Force bases being evaluated for the potential socioeconomic effects of closure. Starting with the host county, the ROI was extended to adjacent counties taking into consideration such factors as the proximity of the most affected communities in the surrounding area and the transportation network, with the goal of including 90 percent of the residences of base personnel. In the second step, this initial ROI was refined as data gathering for the Socioeconomic Impact Analysis Study (SIAS) gave a clearer picture of the area around the base.

Two factors were important in determining the ROI used in this analysis. The first was the distribution of residences for military and civilian personnel stationed at Carswell Air Force Base (AFB) in 1992. This residential distribution will have a critical influence on where the greatest effects of closure will occur. It also provides a useful guide in determining the possible

effects of reusing the base, since it reflects the availability of suitable housing, commuting patterns, and attractiveness of the area communities for people employed on the site. The distribution of both civilian and military personnel serve to quantify the effects of closure. The distributions of the off-base military personnel associated with Carswell AFB, and the workers of Air Force (AF) Plant #4 were used to estimate the future distribution of worker residences.

Table B-1 displays the 1992 residential distribution by jurisdiction and zip code for the 7,166 active duty and civilian personnel employed at the base for whom data are available. Data on the 1992 zip codes of residences for approximately 73 percent of base personnel were obtained from the Consolidated Base Personnel Office. Zip code data for the remaining 27 percent of base personnel were not available.

Active duty personnel comprised 73 percent of the total sample of 7,166 base personnel in 1991 (excluding Air Force Reserves, trainees, and cadets), compared with 12.9 percent for appropriated fund civilians, 13.7 percent for non-appropriated fund civilian and contract personnel, and 0.4 percent for private personnel working on the base. The geographical distribution by zip code area was converted into one based on communities and school districts by means of overlaying maps of the respective area units (Figure B-1 and B-2). In the absence of additional information regarding the distribution of population within the boundaries of both the communities and zip code areas, the correspondence is based solely on physical area.

The zip code data showed that approximately 74 percent (based on total personnel) of the base personnel live within the following eight communities: Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westover Hills, Westworth Village, and White Settlement. Table B-1 represents a sample of the personnel employed at Carswell AFB, and includes military personnel who reside on base. The percentages shown in this table are descriptive and were only used in the ROI definition process. Table B-2 displays the residential distribution by school district and zip code for all personnel at the base for whom data are available. School districts were one method used to present and analyze information because they provide a comprehensive and mutually exclusive coverage of the entire geographic area.

The second factor in determining the extent of the socioeconomic effects was the degree of linkage among the economies of communities in the region. This linkage, based on the trade among sectors within the region, determines the nature and magnitude of multiplier effects of actions at the base. Carswell AFB is located within a region that has a relatively large economic base when compared to other parts of the nation. Therefore, the base's influence on the ROI economy is relatively small. Although some socioeconomic effects outside Johnson, Parker, and Tarrant counties would

Table B-1. Residential Locations of Carswell AFB Military and Civilian Personnel, by Community, Zip Code, and County  
Page 1 of 2

County and Community	Zip Codes	Military Personnel	Percent of		Total Civilian Personnel	Percent of		Total Personnel	Percent of Total	
			Total Military Personnel			Total Civilian Personnel			Total	
Tarrant County		4,762	95.4		751	82.9		5,513	93.4	
	parts of 76109, 76116, 76126, 76132	224	4.5		29	3.2		253	4.3	
Fort Worth		2,986	59.8		391	43.2		3,377	57.2	
	76100, 76101, 76102, 76103, 76104, 76105, 76110, 76113, 76115, 76121, 76122, 76129, 76133, 76134, 76136, 76161, 76163, 76197, 76199, and parts of 76008, 76012, 76028, 76036, 76106, 76107, 76108, 76109, 76111, 76112, 76114, 76116, 76117, 76118, 76119, 76120, 76123, 76126, 76127, 76131, 76132, 76135, 76137, 76140, 76155, 76177, 76179, 76248, 76262									
Lake Worth	parts of 76106, 76114, 76135	12	0.2		2	0.2		14	0.2	
River Oaks	parts of 76106, 76114	99	2.0		16	1.8		115	2.0	
Sansom Park	parts of 76106, 76114	51	1.0		8	0.9		59	1.0	
Westover Hills	parts of 76107, 76114, 76116	6	0.1		1	0.1		7	0.1	

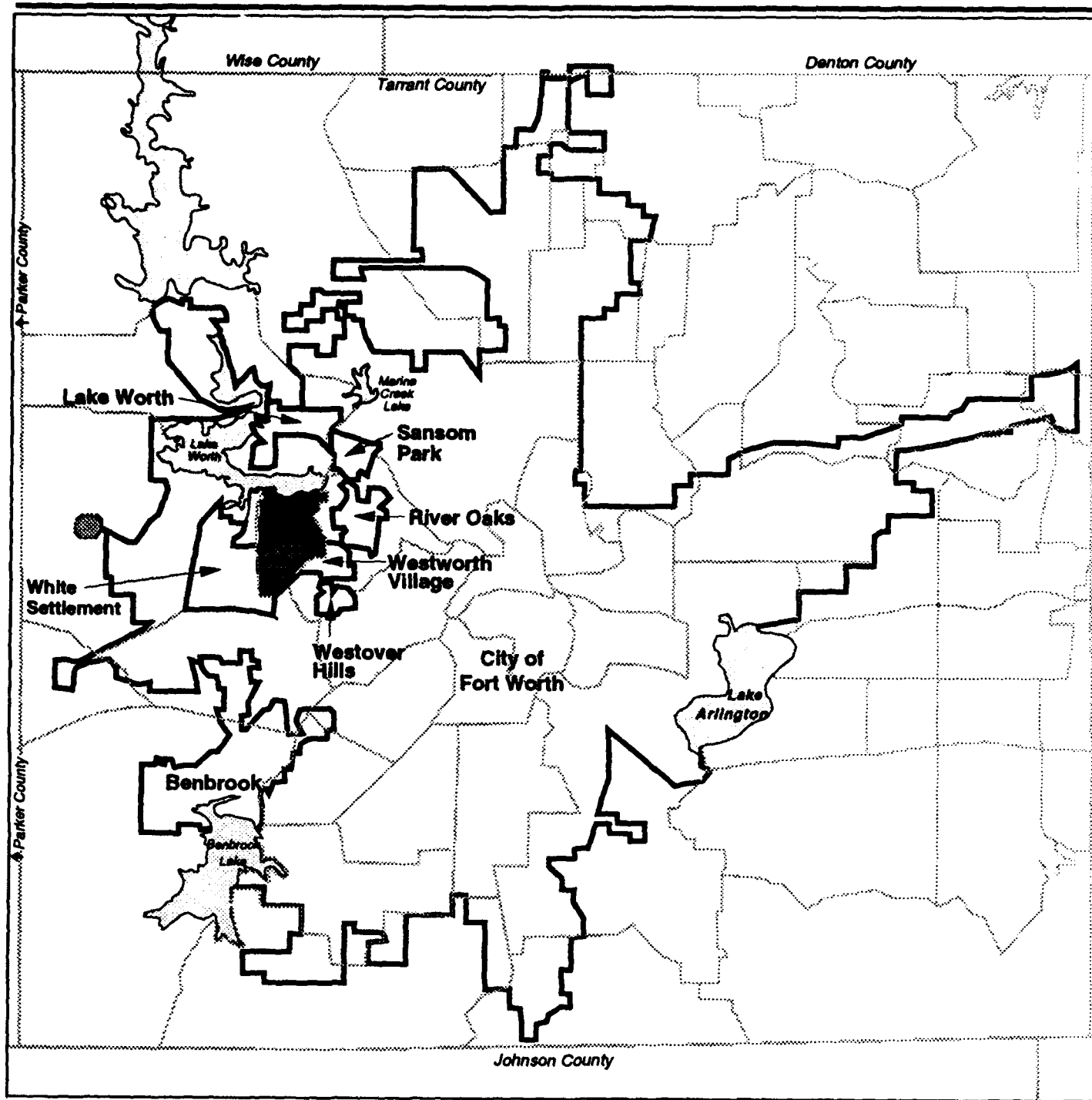
Note: Percentages may not total due to rounding. Data for residence zip codes are from base personnel records. Data for civilian personnel are for appropriated fund, non-appropriated fund, and contract personnel. Populations in areas with more than one jurisdiction per zip code were distributed according to the land area each jurisdiction represented of that zip code. The personnel totals in the zip code data are different than other data provided for 1992 by Carswell AFB. This discrepancy may be the result of different sample dates and/or sources. The number of personnel utilized elsewhere in this analysis was extracted from the Economic Resource Impact Statement or provided by the Air Force. The zip code data were used solely to distribute the effects of closure and reuse to the communities within the ROI.  
ROI = Region of Influence.

Table B-1. Residential Locations of Carswell AFB Military and Civilian Personnel, by Community, Zip Code, and County  
Page 2 of 2

County and Community	Zip Codes	Military Personnel	Percent of Total Military Personnel	Total Civilian Personnel	Percent of Total Civilian Personnel	Total Personnel	Percent of Total
Westworth Village	parts of 76107, 76114, 76127	295	5.9	13	1.4	308	5.2
White Settlement	parts of 76108, 76114, 76116, 76127	217	4.3	14	1.5	231	3.9
Rest of County	76005, 76006, 76010, 76011, 76013, 76014, 76015, 76016, 76017, 76018, 76020, 76021, 76022, 76023, 76034, 76039, 76040, 76051, 76052, 76053, 76054, 76060, 76063, 76092, 76148, 76180 and parts of 76008, 76012, 76028, 76036, 76106, 76108, 76111, 76112, 76116, 76117, 76118, 76119, 76120, 76123, 76126, 76131, 76135, 76137, 76140, 76155, 76177, 76179, 76248, 76262	872	17.5	277	30.6	1,149	19.5
Outside Tarrant County		232	4.6	155	17.1	387	6.6
Total		4,994	100	906	100	5,900	100

Note: Percentages may not total due to rounding. Data for residence zip codes are from base personnel records. Data for civilian personnel are for appropriated fund, non-appropriated fund, and contract personnel. Populations in areas with more than one jurisdiction per zip code were distributed according to the land area each jurisdiction represented of that zip code. The personnel totals in the zip code data are different than other data provided for 1992 by Carswell AFB. This discrepancy may be the result of different sample dates and/or sources. The number of personnel utilized elsewhere in this analysis was extracted from the Economic Resource Impact Statement or provided by the Air Force. The zip code data were used solely to distribute the effects of closure and reuse to the communities within the ROI.  
ROI = Region of Influence.

Carswell AFB Disposal and Reuse SIAS



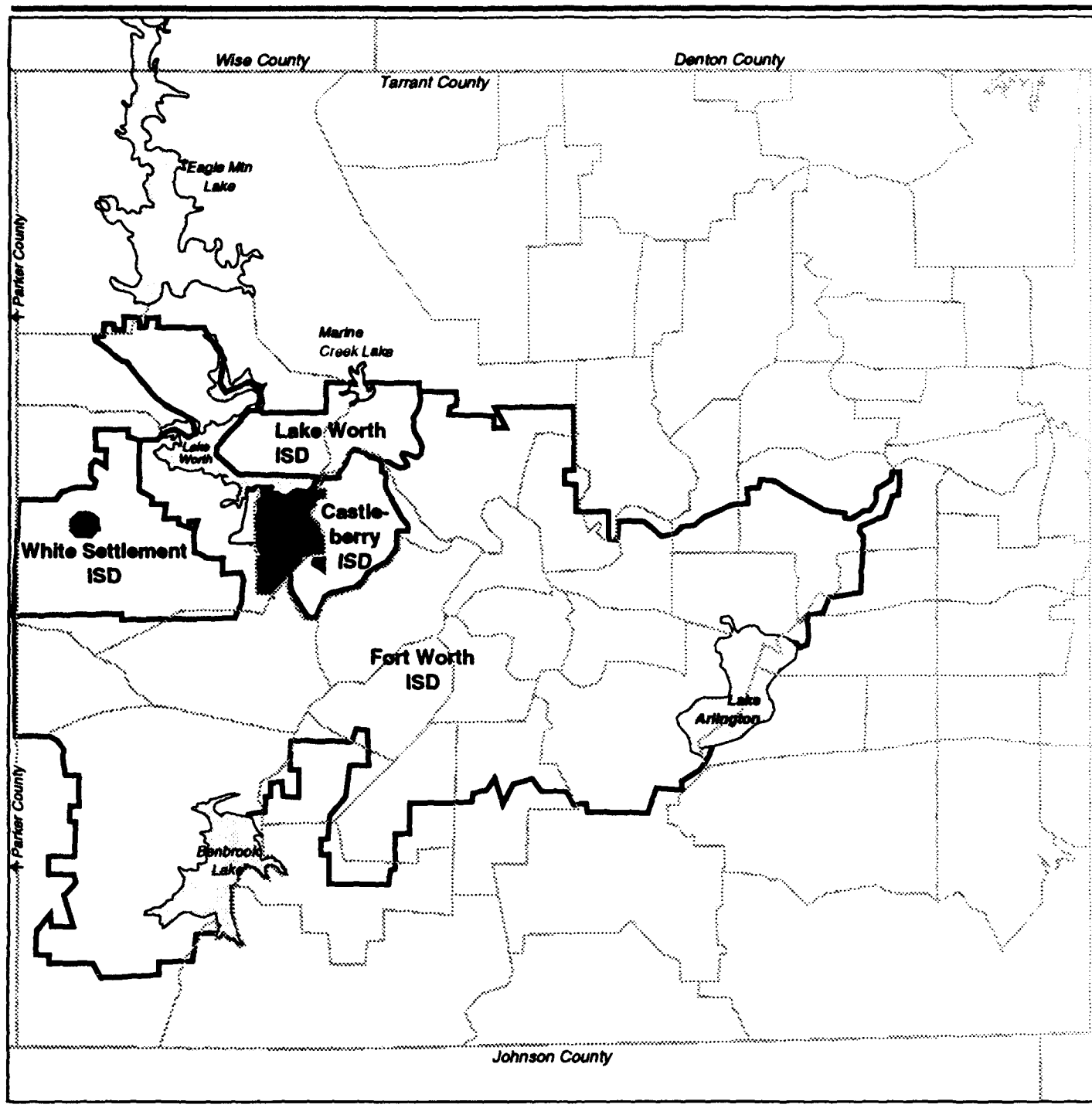
# EXPLANATION

- Community Boundaries
- Zip Code Boundaries
- City of Fort Worth
- Carswell AFB
- 0 1.25 .5 5 Miles



## Community Boundaries

Figure B-1



# EXPLANATION

- School District Boundaries
- ..... Zip Code Boundaries
- Carswell AFB

## School District Boundaries



Figure B-2



**Table B-2. Residential Locations of Carswell AFB Military and Civilian Personnel, by Selected School Districts, and Zip Codes within Tarrant County**

School District	Zip Codes	Military	Civilian	Total	Percent of Total
Castleberry ISD	76106, 76107, 76114, 76116, 76127	928	68	996	16.9
Fort Worth ISD	76008, 76012, 76013, 76016, 76020, 76036, 76103, 76104, 76105, 76106, 76107, 76108, 76109, 76110, 76111, 76112, 76114, 76115, 76116, 76117, 76118, 76119, 76120, 76123, 76126, 76127, 76132, 76133, 76134, 76135, 76137, 76140, 76155	2,435	316	2,751	46.6
Lake Worth ISD	76106, 76114, 76135, 76179	69	13	82	1.4
White Settlement ISD	76008, 76108, 76116	317	45	362	6.1
Remainder of ROI <sup>(a)</sup>		1,245	464	1,709	29.0
<b>Total</b>		<b>4,994</b>	<b>906</b>	<b>5,900</b>	<b>100</b>

Note: (a) Region of Influence (ROI) includes personnel who reside in Tarrant County, outside of selected school districts, as well as those who live in Johnson and Parker Counties. These areas fall outside of the eight communities where detailed information on public services is available.

ISD = Independent School District

Source: U.S. Air Force, 1992.

be likely, the interaction among industries outside the region is so dispersed that the effects in other regions of Texas and of the United States would be minimal. Most of the regional socioeconomic effects associated with closure and reuse of Carswell AFB would occur in Tarrant County.

#### **Region of Influence**

#### **Economic Activity**

Most demands associated with regional economic effects of base closure and potential reuse activities at the site are anticipated to be concentrated within Johnson, Parker, and Tarrant counties, with most effects projected within Tarrant County. Potential indirect effects in counties outside this ROI are expected to be small relative to the total level of economic activity of the counties and are outside the scope of this analysis.

### Population

The population effects of closure and potential reuse of Carswell AFB are analyzed at both regional and local levels including Johnson, Parker, and Tarrant counties (the ROI). Population effects are further allocated based on the likely residency patterns of personnel associated with each reuse alternative and the communities most affected by base closure. These include the communities of Benbrook, Fort Worth, Lake Worth, River Oaks, Sansom Park, Westover Hills, Westworth Village, and White Settlement.

### Housing

Housing effects resulting from closure and reuse of Carswell AFB were analyzed at both regional and local levels. Housing effects are expected to follow the distribution of population effects as discussed above. Thus, the ROI for housing is the same as that for population.

### Public Services

The public service analysis focuses on the principal jurisdictions likely to be most affected by base closure and reuse including those that provide services directly to Carswell AFB military and civilian personnel or their dependents, and those that have public service and facility arrangements with the base. In addition to the eight communities of the ROI, these jurisdictions also include the following four school districts: Castleberry, Fort Worth, Lake Worth, and White Settlement Independent School Districts. Component police and fire departments, including the Tarrant County Sheriff's Department, and the Tarrant County Fire Marshall, responsible for providing service to the unincorporated areas of the county, are also included. The major off-base regional health care providers (including the ten largest facilities) in Tarrant County are also discussed.

### Public Finance

The public finance analysis addresses the fiscal implications of public service changes caused by base closure and reuse. The public finance ROI includes the jurisdictions comprising the public services ROI (i.e., Tarrant County, the eight communities, and four school districts).

### Transportation

The ROI for transportation analysis includes the communities of Fort Worth, Westworth Village, and White Settlement with emphasis on the immediate area surrounding Carswell AFB. Within this geographic area, the analysis covers the principal road, air, and rail transportation networks including the segments of the transportation networks in the region that serve as direct or

indirect linkages to the base, and those that would be affected during reuse including those used by Carswell AFB personnel.

### Utilities

The ROI for assessing utility systems is made up of the service areas of the utility purveyors servicing communities most affected by the closure and reuse of Carswell AFB. The ROI includes the communities of Fort Worth, River Oaks, Sansom Park, Westworth Village, and White Settlement.

### **Methods**

#### Economic Activity

Analysis of socioeconomic effects utilized total output, employment, and earnings multipliers for the ROI, obtained from the U.S. Bureau of Economic Analysis (BEA) Regional Input/Output Modeling System (RIMS II). Interindustry multipliers were prepared by the BEA using the United States input-output table in combination with the most recent region-specific information describing the relationship of the regional economy to the national economy. The BEA's RIMS II model is based on research by Cartwright, et al. (1980).

The same methodology was used to develop quantitative projections of economic activity for closure conditions, and the reuse alternatives. Changes in regional demand in each local industrial and household sector were first estimated as follows:

- For preclosure and closure conditions, demands from residual base operations and caretaker activities were estimated from employment, payroll, and expenditure data published in Economic Resource Impact Statements for Carswell AFB.
- For military reuse, demands were estimated from data on personnel, procurements, and salaries provided by the Air Force and Navy.
- For civilian reuse, construction-phase demands were estimated from cost data published by R.S. Means Company (1991a, 1991b), from parameters developed in support of the Description of the Alternatives, and from RIMS II labor and material coefficients. Operations-phase demands were estimated from the Description of the Alternatives and RIMS II coefficients.

These primary or direct effects were then multiplied, using RIMS II coefficients specific to the regional economy, to provide estimated total

changes in output associated with the reuse alternatives. Input/output sectors were selected to reflect the anticipated spending profile associated with Proposed Action and alternatives in order to capture the economic characteristics of each scenario within the ROI. The direct operations and construction jobs stimulate the regional economy, which in turn results in the creation of secondary jobs in the ROI. Total employment (direct and secondary) associated with implementation of the alternatives for the year 2013 for the eight aggregated input/output sectors and DOD is shown in Table B-3.

**Table B-3. Total Employment Aggregated to Eight Input-Output Industry Groups and Department of Defense Employment, 2013**

Industry Group	No-Action/ Realignment Alternative	Proposed Action	Mixed Use Alternative
Agriculture and Mining	8	21	38
Construction and Maintenance	50	327	563
Manufacturing	113	727	1,791
Transportation and Utilities	100	528	1,042
Wholesale Trade	99	254	785
Retail Trade	439	2,872	2,533
Finance/Insurance/Real Estate	186	2,369	3,257
Services	2,192	7,833	14,883
Department of Defense	3,931	3,881	3,881
Total	7,118	18,812	28,773

The number of out-migrating workers associated with phase down of base operations was estimated according to a set of proportional assumptions. All military personnel living within the ROI (97.6 percent), except for those associated with the retained military area, would leave the area when the base closes. The remaining 2.4 percent of the military personnel and their dependents live outside the ROI. The out-migrant population includes active duty military personnel and their dependents who live on and off base. A community's off-base out-migrant population was determined by subtracting the community's on-base population from its total out-migrant population. The 1991 on-base population (2,044 persons) was allocated to the three communities whose jurisdiction's incorporate Carswell AFB (Fort Worth, Westworth Village, and White Settlement). The population was distributed based upon housing unit location by community. It is assumed that all

appropriated and non-appropriated fund civil service personnel, contract employees, and military retirees will remain in the region after the closure of Carswell AFB. This assumption is based on the fact that the Fort Worth metropolitan area and the adjacent Dallas metropolitan area contain substantial employment opportunities. The area is also projected to continue expansion of its economic base and employment over the coming decades.

Average household size assumptions were specific to each type of employment including direct and secondary jobs by category (Table B-4). For out-migrating military families, the number of personnel and dependents was based on Carswell AFB personnel records. The in-migrating households were assumed to correspond with the average size of state-to-state migrating families (2.9 persons per household) between 1980 and 1985 (U.S. Bureau of the Census, 1987). For the nonmilitary, site-related workers already living in the area, the household size of the community in which they resided was used.

**Table B-4. In-Migrating Workers and Population by Employment Category, Proposed Action, 2013**

Employment Category	Site-Related Employment	Percent Relocating to Region	In-Migrating Employees	Household Size	In-Migrating Population
<b>Military Reuse</b>					
Direct	3,881	30.2 <sup>(a)</sup>	1,171	2.4 <sup>(b)</sup>	2,802
Secondary	3,129	0.8 <sup>(c)</sup>	24	2.9	70
<b>Civilian Reuse</b>					
Direct Operations	5,053	2.0	101	2.9	293
Direct Construction	48	1.0	0	2.9	0
Secondary	6,701	1.0	67	2.9	195
<b>Total</b>	<b>18,812</b>		<b>1,363</b>		<b>3,360</b>

Notes: (a) This is a resulting percentage discussed.  
 (b) This number assumes a household size of 2.9 for military and civilian personnel off-base and for family households on base. It includes single persons residing in dormitories on base.  
 (c) This percentage assumes that secondary personnel associated with the 301st FW are available in the local area. One percent of other secondary personnel are assumed to in-migrate.  
 FW = Fighter Wing.

It is anticipated that a number of active duty military and civilian DOD personnel and their dependents associated with the military activities reassigned to NAS Fort Worth will in-migrate to the ROI. In-migrating active duty personnel and their dependents will reside both on base (in dormitories and family housing units) and off base in the surrounding communities.

The number of nonmilitary workers associated with each alternative was estimated from land uses and other characteristics of each alternative. The

numbers of military personnel associated with the No-Action/Realignment Alternative were provided by the Air Force and the Navy.

The employment and population data provided in Chapter 4 represent only full-time, weekday active duty and civilian employment activities. The weekend reservists were excluded from this analysis due to several factors. First, since most live within commuting distance, very minor effects to the economy would be expected. Secondly, given that most reservists have full-time jobs, their reserve payrolls constitute a small portion of reservists' total income in addition to being a fraction of the total income in the ROI. Finally, from an environmental perspective, since weekend activity levels would not exceed weekday levels, their associate environmental effects have already been captured.

The total number of potential in-migrant workers and/or military personnel entering the ROI are allocated to counties and specific communities. This allocation procedure is accomplished using information that describes the residential distributions of off-base military personnel of Carswell AFB and the civilian employees of AF Plant #4 (Table B-5). In-migrating secondary workers whose jobs are related to procurement expenditures will be allocated using population portions derived from 1990 Census population distributions. This assumption was based on the expectation that the attractiveness of each residential location, including attributes, such as adequate public and commercial services and proximity to work location, would best be measured by the preferences of workers residing there. The allocation distributions used in this process are shown in Table B-5.

In-migration assumptions are related to the out-migration assumptions. No nonmilitary jobs were projected to be solely filled by in-migrating workers since this would imply that no persons with the necessary skills were available in the ROI to perform these jobs. Direct on-site operations jobs were assumed to require skill levels similar to those of civil service or appropriated fund personnel. Construction workers were expected to be readily available in the area, although supervisory and highly-skilled craft workers might be more likely to in-migrate from outside the ROI. Relatively few secondary workers would move into the ROI due to the availability of suitable workers in the local labor force. In-migration assumptions and calculations for the alternatives in the year 2013 are presented in Tables B-4 and B-5.

Once the nonmilitary, site-related workers are calculated, the estimated proportion of these workers who would in-migrate is calculated in several steps. Site-related workers are first specified according to the type of employment (i.e., operations, construction, and secondary) and residential location within the ROI. These values are then multiplied by the respective in-migration percentages for each labor category (2.0, 1.0, and 1.0 percent for operations, construction, and secondary workers, respectively). The

**Table B-5. Distribution Factors for Off-Base In-Migrating Personnel (Percentages)**

County and Community	Active Duty Off-Base	Civilian Workers	Secondary Workers (Procurements)
Johnson County	0.4	6.1	7.3
Parker County	1.8	11.8	4.9
Tarrant County	97.8	82.1	87.8
Benbrook	4.5	1.4	1.5
Fort Worth	65.6	42.7	33.6
Base in Fort Worth	0.0	0.0	0.0
Lake Worth	0.2	0.3	0.3
River Oaks	2.1	0.7	0.5
Sansom Park	1.1	0.4	0.3
Westover Hills	0.1	0.2	0.1
Westworth Village	6.1	0.4	0.2
Base in Westworth Village	0.0	0.0	0.0
White Settlement	4.3	1.4	1.2
Rest of Tarrant County	13.8	34.6	50.1
ROI	100	100	100

ROI = Region of Influence.

number of workers for each geographic area are then rounded and summed to give the total number of in-migrating operations, construction, and secondary workers in the milestone years. Once the values for the three counties and the individual communities are estimated, the values for the rest of Tarrant County are estimated by taking the difference between the Tarrant County total and the sum of the rounded values for communities within the county. To estimate the related migratory population changes within the ROI, the assumed household size (2.9) is applied to the number of in-migrating workers by location. These values are then rounded to whole persons for presentation in the appropriate tables.

The calculations presented in Table B-5 indicate the nature of the analysis performed for the employment and population in-migration effects of reuse. The same methodology was utilized for all reuse alternatives. Site-related employment by category was projected for each year of the analysis. Worker in-migration assumptions were then applied to these job projections. The result represented the number of workers in the ROI in that year for each employment category who would not be in the ROI without reuse. The number of workers when multiplied by the average household size determined the number of persons in the ROI in that year who would not have been there without reuse. For the No-Action/Realignment Alternative, the Proposed Action, and the Mixed Use Alternative, an average of 16.8, 7.2, and 5.2 percent, respectively, of workers holding site-related jobs were

projected to in-migrate to the ROI because of the reuse alternatives. A portion of the site-related workers may move into the ROI due to availability of site-related employment, or refrain from moving out of the ROI due to availability of site-related employment when they would otherwise leave. The data that are discussed under population methods below exclude the effects of the ambient increase in population.

A number of assumptions were made regarding the relocation of military personnel (both active duty and civilian) from the three installations from which missions will transfer to NAS Fort Worth. In the cases of NAS Memphis and NAS Glenview, active duty personnel and their dependents are assumed to relocate to NAS Fort Worth and the surrounding ROI. No civilian personnel will relocate. It is assumed that 70 percent of the 225 active duty personnel are married (157 persons) and of these, 18 percent (28 persons) will reside on base in military family housing. The remaining 129 married personnel will reside off base in the surrounding communities. Of the 68 single personnel, it is assumed that all will reside in dormitories on base.

In the case of personnel stationed at NAS Dallas, some are assumed to reside outside of the ROI and 70 percent are assumed to be married. Of these married persons, 25 percent are assumed to own homes, and of these families only 2 percent are assumed to relocate into Tarrant County. The remaining 98 percent are assumed to remain outside the ROI. Of all the married personnel (both homeowners and renters) relocating to the ROI, 18 percent will reside on base in military family housing with the remaining 82 percent residing off base in surrounding communities. The remaining 75 percent are assumed to occupy rental housing with 50 percent relocating into the ROI and 50 percent remaining outside the ROI and commuting to the base.

With regard to the 30 percent of the personnel assumed to be single, 25 percent are assumed to own homes with the remaining 75 percent occupying rental housing. Of the single homeowners, 2 percent are assumed to relocate to the ROI with 98 percent choosing to remain outside the ROI and commuting to work. Of the single personnel (both homeowners and renters) relocating to the ROI, all are assumed to reside on base in dormitories.

Only a portion of the 940 civilian personnel at NAS Dallas will relocate to the ROI. It is assumed that 60 percent of these personnel (564 households) are homeowners and of these, only 1 percent will relocate to the ROI. Of the 40 percent who are renters (376 households), 35 percent are assumed to relocate to the ROI. This results in 138 households relocating to the ROI and 802 households remaining outside the ROI and commuting to work.



### Population

Population changes associated with preclosure, and closure conditions, the No-Action/Realignment Alternative, the Proposed Action, and Mixed Use Alternative are an important determinant of other socioeconomic and environmental effects. These population changes have two key components: baseline growth and relocation of workers and their dependents.

Baseline population projections for the ROI and individual counties were prepared by NPA Data Services, Inc. These projections were prepared to the year 2010, and forecasts for the last three years of analysis were extrapolated from that point. These projections assumed continued operation of Carswell AFB within the ROI. The forecasts were then adjusted to reflect the effects of base closure by subtracting the estimated population loss expected with closure of the base.

The in-migration of nonmilitary workers in response to closure and subsequent reuse was determined using the methods and assumptions discussed in the Economic Activity section of this appendix. The number of dependents expected to relocate with the nonmilitary workers was estimated based on a household size of 2.9. With regard to military population, the distribution of single and family households is provided by Naval organizations. For the non-immigrating, nonmilitary, site-related workers, the household size of the community in which they currently resided was used.

This projected number of in-migrants was at the ROI level and was subsequently allocated to smaller geographical units, i.e., counties, communities, and school districts.

To evaluate anticipated population effects, changes associated with each reuse scenario were compared to projected changes without reuse. Both graphic and numerical comparisons were employed in this evaluation.

### Housing

The population changes associated with closure and reuse would result in changes in housing demand. Housing demand effects of closure and reuse were estimated from migration projected for each alternative, assuming each in-migrating household would require one unit and each out-migrating household would relinquish one unit. The increased demand for housing units is derived from forecasts of the number of in-migrants expected to reside in the counties and/or communities under analysis.

Expected housing availability was considered for the ROI and key communities based on recent housing construction and vacancy trends.

Projected demands associated with reuse scenarios were then assessed in the context of these recent trends in the key communities. The base currently contains over 750 family housing units, a number of which are not occupied. A number of both dormitory spaces and family housing units will be available for occupancy by on-base active duty personnel and their dependents.

#### Public Services

Potential effects on local public services due to changes in demand associated with closure and reuse of Carswell AFB were determined for the region's key public services: general government, public education, police protection, fire protection, and health care. Effects were determined for the jurisdictions that have the closest linkages to Carswell AFB and for base military and civilian personnel and their dependents, as well as jurisdictions most likely to be most affected by reuse of the base.

Several key assumptions regarding future jurisdictional control of base property were made in determining the effects on public services. These assumptions also apply to the assessment of effects on public finance.

The levels of general public service were determined considering each jurisdiction's population (county, community, and school district); the land area; type of service; and, in some instances, the minimum level of service needed to maintain government functions. Emphasis was placed on the population served using ratios of employees (e.g., municipal employees, sworn officers, professional fire fighters) to population served and student/teacher ratios at the primary and secondary public school levels. Per capita level-of-service ratios were determined for each affected jurisdiction comparing the actual service levels for 1991 or 1992 to the actual off-base population for 1991 or 1992, whichever was available.

It is possible that two agencies may have the same jurisdictional boundaries and different populations served. For example, Tarrant County government serves the entire county including its off-base population. The Tarrant County Sheriff's Department, however, has jurisdiction over the entire county, yet only actively patrols the unincorporated areas. Thus, the population base they serve is smaller than that of the Tarrant County government.

These service ratios were used to estimate jurisdiction-specific future requirements for services, assuming that local governments would exercise flexibility in providing services to accommodate changes in area population. For example, schools may choose to close facilities or combine classes in response to lower enrollments and lower funding levels; law enforcement agencies may reassign officers if reduced area population results in staff

reductions; and/or general government functions may be performed with more part-time or on-call personnel and fewer full-time employees.

Ratios of employees to jurisdictional or land area were used to calculate requirements for personnel based on the additional on-site land area to be served (area-generated demands). General government effects to smaller jurisdictions were analyzed qualitatively.

Projected changes in public school enrollments were forecast by applying the proportion of school age population from 1990 Census population for Tarrant County to the number of persons in migratory-related households for both closure and reuse. These enrollment effects were then distributed to school districts based on the zip code data of the migratory-related workers. The number of required public school teachers was based on projected increases in enrollments and 1990-1991 student/teacher ratios.

Finally, the analysis examined the geographical distribution of potential effects. Because of the magnitude of some effects of closure and reuse, past level-of-service ratios may not adequately meet new service requirements. Changes in service area and types of services to be provided were considered. Staff at key local agencies were contacted to assess these and other unique factors.

#### Public Finance

Local jurisdiction finances were evaluated based on changes in historic revenues and expenditure levels, changes in fund balances, and reserve bonding capacities. The analysis concentrated on each jurisdiction's governmental funds (general fund, special revenue funds, and, as applicable, capital projects and debt service funds). Other funds, such as enterprise funds that are principally funded through user charges without contributing to the general tax burden of area residents, have not been included in the analyses.

For school districts, all governmental funds were considered. School district revenues in the last 4 years were relatively stable; 1990-91 preclosure year was utilized to determine per student revenues and expenditures. Effects of closure were estimated by multiplying a per-student loss in net revenues (given in 1989 dollars) by the annual loss in students. For reuse, a per-student gain in net revenues was multiplied by the annual increase in enrollments due to the reuse alternative. For both closure and reuse, expenditures were assumed to remain constant.

Post-closure conditions and effects of reuse alternatives were determined using per capita revenue and expenditure ratios.

The effects of population changes on the revenues and expenditures of the eight communities and Tarrant County were forecast using a per capita approach. Only selected categories used to describe revenues and expenditures as reported in the financial reports of the respective government jurisdictions are utilized. The revenue categories are: taxes, fees, fines and forfeitures, charges for services, and intergovernmental transfers. Expenditures consist of: general government, public safety and public works, public services (including police, fire, library, and recreation), and health and welfare. To the degree that an action does not call for a net change in the number of residents of the jurisdiction, fiscal effects are not projected. The creation of job opportunities at the site could result in changes in existing residential patterns. A worker acquiring a job at the site and relinquishing one elsewhere within the ROI could result in a change of residence. This level of detail is, however, not analyzed in this study. Net fiscal effects are based on the projected increase (or decrease) in revenues minus the projected increase (or decrease) in expenditures.

#### Transportation

The transportation network of the ROI was examined to identify potential effects to levels of service (LOS) arising from closure conditions (caretaker status of Carswell AFB) and effects of reuse alternatives. Changes in traffic volumes and peak-hour LOS ratings were projected for road segments (excluding intersections and highway ramps). LOS ratings were based on Highway Capacity Manual recommendations (Transportation Research Board, 1985).

Effects on roads in the ROI were measured in terms of the changes in the number of vehicles traversing uniform sections of roadway. To measure these changes, traffic volumes (including projected reuse-related traffic) were compared to the capacity of the road segment and determined as a ratio (known as volume-to-capacity ratio). The capacity of a roadway is defined as the maximum hourly rate at which vehicles can pass a uniform section of roadway traffic under prevailing roadway, traffic, and control conditions.

Traffic volumes are typically reported as either the daily number of vehicular movements in both directions on a segment of roadway averaged over a full calendar year (average annual daily traffic [AADT]) or the number of vehicular movements on a road segment during the average peak hour. The average peak-hour volume for urban areas typically is about 10 percent of the AADT (Transportation Research Board, 1985). These values are useful indicators in determining the extent to which the roadway segment is used and in assessing the potential for congestion and other problems.

Traffic flow conditions are generally reported in terms of LOS, rating factors that represent the general freedom (or restriction) of movement on roadways

(Table B-6). The LOS scale ranges from A to F with low-volume, high-speed, free-flowing conditions classified as LOS A. LOS E is representative of conditions that, although not favorable from the point of view of the motorist, provided the greatest traffic volume per hour. With minor interruptions, however, LOS E will deteriorate to LOS F (Transportation Research Board, 1985).

**Table B-6. Road Transportation Levels of Service**

LOS	Description	Criteria (Volume/Capacity)		
		Freeway <sup>(a)</sup>	4-Lane <sup>(b)</sup> Arterial	2-Lane <sup>(c)</sup> Highway
A	Free flow with users unaffected by presence of other users of roadway	0-0.35	0-0.28	0-0.10
B	Stable flow, but presence of other users in traffic stream becomes noticeable	0.36-0.54	0.29-0.45	0.11-0.23
C	Stable flow, but operation of single users becomes affected by interactions with others in traffic stream	0.55-0.77	0.46-0.60	0.24-0.39
D	High density, but stable flow; speed and freedom of movement are severely restricted; poor level of comfort and convenience	0.78-0.93	0.61-0.76	0.40-0.57
E	Unstable flow; operating conditions at capacity with reduced speeds, maneuvering difficulty, and extremely poor levels of comfort and convenience	0.94-1.00	0.77-1.00	0.58-0.94
F	Forced or breakdown flow with traffic demand exceeding capacity; unstable stop-and-go traffic	1.00	1.00	0.94-1.00

Notes: (a) Table 3-1, Levels of Service for Basic Freeway Section, Highway Capacity Manual, Transportation Research Board, 1985.

(b) Table 7-1, Levels of Service Criteria for Multilane Highways one 4-lane arterial, 50 mph Design Speed, Highway Capacity Manual, Transportation Research Board, 1985.

(c) Table 8-1, Level of Service Criteria for General 2-Lane Highway Segments, Rolling Terrain, 20 percent no passing zones, Highway Capacity Manual, Transportation Research Board, 1985.

LOS = Level of Service.

mph = miles per hour.

LOS ratings presented in this study were determined by peak-hour traffic volumes and capacity for key roadways.

Traffic volumes for the study area were derived from the AADT counts provided by the Texas Department of Highways and Public Transportation. Changes in traffic volumes arising from land use changes at Carswell AFB were estimated, and resulting volume changes on the local road network were determined. Resulting changes in peak-hour LOS ratings were then

determined. Changes in work and associated travel patterns were derived by assigning or removing workers (by place of residence) to or from the most direct commuting routes. Those portions of the transportation system on which conditions were projected to decline to LOS F were assumed to be upgraded to support LOS E. These improvements were assumed to be part of the reuse alternative under analysis.

Changes in demand for air and rail freight and passenger service arising from closure and reuse of the base were determined from data developed for each alternative.

Additional information on methods used in the transportation analysis is presented in Appendix E of the Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas.

### Utilities

The utility systems addressed in this analysis include the facilities and infrastructure used for:

- Potable water pumping, treatment, storage, and distribution
- Wastewater collection and treatment
- Solid waste collection and disposal
- Energy generation and distribution, including the provision of electricity, and natural gas.

For the reuse alternatives, local purveyors of potable water, wastewater treatment, and energy were anticipated to provide services within the area of the base. It was also assumed that reuse activities would generate solid wastes that would be disposed in area landfills.

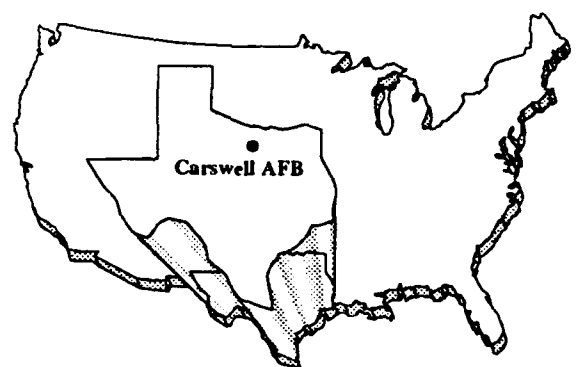
Long-term projections of demand and population were obtained from the various utility purveyors within the ROI. In each case, the most recent comprehensive projections were used; these projections were made prior to the base closure announcement and/or do not take into account a change in demand from the base. These projections, therefore, were adjusted to reflect the decrease in demand associated with closure of Carswell AFB and its subsequent operation under post-closure conditions. The utility demands associated with the No-Action/Realignment Alternative were added to these projections. The utility demands associated with the Proposed Action and Mixed Use Alternative were also added to these projections and the increases were compared against the closure conditions.

The potential effects of reuse alternatives were evaluated by estimating and comparing the additional direct and indirect demand associated with each alternative to the historic and projected operating capabilities of each utility system. Projections in the utilities analysis include demand for water, wastewater treatment, solid waste disposal, electricity, and natural gas for Carswell AFB property from activities planned under the Proposed Action and reuse alternatives, as well as resulting changes in domestic demand associated with direct and indirect population changes in the ROI.

A detailed description of methods used for the utilities analysis is found in Appendix E of the Environmental Impact Statement Disposal and Reuse of Carswell AFB, Texas.

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## APPENDIX C

## **APPENDIX C**

### **GLOSSARY OF TERMS AND ACRONYMS/ABBREVIATIONS**

#### **GLOSSARY OF TERMS**

**Aggregate.** A summation of values.

**Average Annual Daily Traffic (AADT).** For a one-year period, the total volume passing a point or segment of a highway facility in both directions, divided by the number of days in the year.

**Biophysical.** Pertaining to the physical and biological environment, including the environmental conditions crafted by man.

**Civilian Health and Medical Plan of the Uniformed Services (CHAMPUS).** A co-payment medical insurance plan that provides coverage for specific medical services to eligible dependents of active duty, retired, or deceased military personnel.

**Commercial aviation.** Aircraft activity licensed by state or federal authority to transport passengers and/or cargo for hire on a scheduled or nonscheduled basis.

**Constant 1989 dollars.** The transformation of current year dollars into 1989 dollars using an appropriate inflator or deflator index to eliminate the effects of inflation and allow for comparability over time.

**Convey.** To deliver title of property.

**Direct Effect.** Effects resulting solely from a program, project, or action, and immediately related to the program, project, or action in space or time.

**Effects/Impacts.** An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the effects, usually measured using a qualitative and nominally subjective technique. In environmental impact statements, as well as in the Council on Environmental Quality regulations, the word impact is used synonymously with the word effect.

**Employment.** The total number of full- and part-time jobs held by wage and salary workers, both civilian and military, as well as farm and nonfarm proprietors.

**Excess property.** Property no longer required by the federal agency. Excess property is made available to all other federal agencies.

**Expenditure.** A disbursement of funds by a government entity; includes operation and maintenance costs, as well as capital costs.

**Fiscal Year.** In government finance, the 12-month period that corresponds to the jurisdiction's accounting period. The federal fiscal year is October 1 through September 30; local and state government fiscal years vary from jurisdiction to jurisdiction.

**Fund Balance.** Resources remaining from prior years that are available to be budgeted in the current year.

**General aviation.** All aircraft that are not commercial or military aircraft.

**Housing stock.** The number of structural units intended primarily as a domicile (e.g., single-family attached, single-family detached, multi-family dwellings, mobile homes, etc.) and that is suitable for occupancy at a point in time, usually the beginning of the calendar year.

**Effects (Impacts).** An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the effects, usually measured using a qualitative and nominally subjective technique. In environmental impact statements, as well as in the Council on Environmental Quality regulations, the word impact is used synonymously with the word effect.

**Infrastructure.** The basic installations and facilities on which the continuance and growth of a locale depend (roads, schools, power plants, transportation, and communication systems, etc.).

**Interstate.** The designated National System of Interstate and Defense Highways located in both rural and urban areas; they connect the East and West coasts and extend from points on the Canadian border to various points on the Mexican border and Gulf of Mexico.

**Level of service (LOS).** In transportation analyses, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists and/or passengers.

**Level of service.** In public services, a measure describing the amount of public services (e.g., fire protection and law enforcement services) available to community residents, generally expressed as the number of personnel providing the services per 1,000 population.

**Migratory Effects.** Persons who would leave the ROI or move into the ROI as a result at closure or reuse of an Air Force base, due to changes in employment, and its effects on population, housing, public services, public finance, transportation, and utilities.

**Mitigation.** A method or action to reduce or eliminate program impacts.

**Multiple family housing.** Townhouse or apartment structures that accommodate more than one family though each dwelling unit is only occupied by one household.

**Mutual Aid Agreement.** An informal, or formal, non-paid agreement among providers of public services, which commits municipalities to provide assistance, generally on an as-available and as-needed basis, to other municipalities.

**National Environmental Policy Act (NEPA).** Public Law 91-190, passed by Congress in 1969. The Act established a national policy designed to encourage consideration of the influences of human activities (e.g., population growth, high-density urbanization, industrial development) on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues in order to facilitate the decision-making process.

**Operating Location (OL).** An organizational element of the Air Force Base Conversion Agency located at a closing base. The OL is responsible for the care and custody of closed areas of the base, administration of real and related personal property, and environmental cleanup. This office is the primary point of contact for local community reuse organizations and the general public who deal with the disposal and reuse of the base.

**Operations jobs.** Direct on-site employment created by the site development.

**Out-migration.** The act of leaving one region or community in order to settle in another.

**P.L. 81-874.** A federal law that authorizes financial assistance for local school districts upon which the United States has placed financial burdens as the result of the acquisition of real property by the United States; a sudden and substantial increase in enrollment as the result of federal activities; or due to the need to provide education for children residing on federal property or whose parents are employed on federal property.

**Rate of growth.** The average annual percentage change, compounded over a period of time.

**Secondary Effects.** Effects (usually employment, population, and income/spending changes) caused by a program, project, or action, but removed from the program, project, or action in space or time.

**Secondary Employment.** The additional employment generated by the economic activity required to produce the inputs to meet the initial changes in demand. The term is often used to include both indirect and induced effects.

**Section 3 Transition Entitlements.** Special impact aid program authorized under P.L. 81-874 for continued funding of federal impact aid to a local school district even after the district becomes ineligible under general program guidelines. Provides authority for continued impact aid when a decrease or cessation of federal activities in an area results in a substantial decrease in the number of children eligible for such aid. Payments would be for a period of 3 years, in reduced amounts (90 percent of the previous year's entitlement), and are subject to Congressional appropriation.

**Shortfall.** The difference between projected local government expenditures and revenues when the projected expenditures are greater than projected revenues.

**Single-family housing.** A conventionally-built house consisting of a single dwelling unit occupied by one household.

**Surplus property.** Property that is of no interest to the federal government. These properties are made available to state, local, or nonprofit organizations or sold to the public.

**Transfer.** Deliver U.S. Government property accountability to another federal agency.

**U.S. Environmental Protection Agency (U.S. EPA).** The independent federal agency, established in 1970, that regulates federal environmental matters and oversees the implementation of federal environmental laws.

## ACRONYMS/ABBREVIATIONS

AADT	average annual daily traffic
ACC	Air Combat Command
AF	Air Force
AFB	Air Force Base
AFBCA	Air Force Base Conversion Agency
AFRES	Air Force Reserve
AMT	American Medical Transport
ATCT	Air Traffic Control Tower
ARFF	Airport Rescue and Fire Fighting
BRAC	Base Realignment and Closure
CHAMPUS	Civilian Health and Medical Program of the Uniformed Services
CRA	Carswell Redevelopment Authority
CRI	CHAMPUS Reform Initiative
CSC	Central Security Control
DAL	Dallas Love Field Airport
DARE	Drug Awareness Resistance Education
DBCRA	Defense Base Closure and Realignment Act
DFW	Dallas/Fort Worth International Airport
DOD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EMT	emergency medical technician
EPA	Environmental Protection Agency
ERIS	Economic Resource Impact Statement
FAA	Federal Aviation Administration
FBOP	Federal Bureau of Prisons
FW	Fighter Wing
FY	fiscal year
HHS	Health and Human Services
ICU	intensive care unit
ISD	Independent School District
kV	kilovolt
LOS	level of service
LVN	licensed vocational nurse
MGD	million gallons per day
MMCF	million cubic feet
MSA	Metropolitan Statistical Area
MWH/day	megawatt hours per day
NAS	Naval Air Station
NCTCOG	North Central Texas Council of Governments
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
OL	operating location
P.L.	Public Law
QD	quantity distance

RN	registered nurse
ROI	region of influence
ROTC	Reserve Officer Training Corps
SAC	Strategic Air Command
SH	State Highway
SIAS	Socioeconomic Impact Analysis Study
TCU	Texas Christian University
TIP	Transportation Improvement Plan
TU	Texas Utilities
TWU	Texas Wesleyan University
UNICOR	Federal Prison Industries
U.S. EPA	U.S. Environmental Protection Agency
UTA	University of Texas at Arlington
VA	Veterans Administration
VAQ	Visiting Airmen's Quarters
VOQ	Visiting Officers' Quarters
WHCA	White House Communications Agency
WSA	Weapons Storage Area

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